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JOURNAL

1984

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EDITORIAL

Entries to the Journal 1984 reflect how members have ranged widely over Scotland during this unforgettable, lovely summer. The thanks of the Editorial Committee go to all who have contributed to the Journal in any way at all.

During the year many have taken their Natural History interests to northern and/or western Scotland including Michael M. Scott, one of our members and a Wildlife Consultant, who has reported on a course he attended in Shetland; Bob and Betty Smith who have written about their exciting recording of dragonflies on the Black Loch, near Connel, and Mary Robertson who has described in lighter vein a mini-bus holiday with nine other keen naturalists in Sutherland.

It will be seen that the Society is not only interested in recording animals and plants but also in the conservation of their habitats, and in the creation of new habitats from, at first sight, unpromising areas.

Reports of two Society outings, the first to Boghall farm on 4th July and the second to Oldcastles farm on 14th July are so interesting and thought-provoking that they have been included in the main part of the Journal. The first puts forward the potentials for Conservation at Boghall balancing them with the viewpoint of the farmer. The second describes what measures are already well developed and what decisions the farmer had to take before carrying them out. Both show how it is possible for conservationists and farmers to collaborate and compromise.

Another article, "Bings - a wildlife refuge not to be ignored" by Dr John Sheldon, Regional Ecologist, gives an encouraging account of how an area, desolated by the remains of a mining industry, is being transformed into an interesting wildlife refuge and a potentially interesting place to visit. It is hoped that more derelict areas will be developed in this imaginative way.

Some of the members are taking part in a survey of Gasteromycetes (i.e. stomach fungi) by Dr Roy Watling. We thank Dr Watling for writing about this survey and bringing us up to date with its progress.

As always, there are many people to thank for keeping the Society lively and smooth-running throughout the year. They include the President and members of the Council, especially the Secretary and Assistant Secretary; the Minutes Secretary and Records Secretary; the Catering group who provide refreshments and the Librarian, who has written a note for members at the end of this Journal; those who operate and care for the projector; the members of the Excursion Committee and Leaders who help them in arranging and carrying through excursions which are so much enjoyed and appreciated by members. We thank our Honorary Treasurer, Mr A.B. Dickson and our newly appointed Honorary Auditor, Mr D.S. Hoskins for the work they do. We also thank Gordon Finnie and his associates and Frances Anderson for their care and interest in the production of the Journal.

We record with sadness the death of Dr W.A. Fairbairn who was a very active member of the Society until ill health forced him to curtail his interests. He edited the Journal, or Newsletter as it was then called, from 1967 when he retired from the Department of Forestry at Edinburgh University until 1971. Three years later he was elected Vice-President.

PRESENTATION OF MEMORIAL LOCH AT BAWSINCH

On 9th April 1984 there took place at Bawsinch, Duddingston, a ceremony which marked the close relationship between the E.N.H.S. and the Scottish Wildlife Trust, which is responsible for the administration of both the Bawsinch Reserve and the Duddingston Loch Bird Sanctuary. This took the form of the handing over of the Gunn Loch within the Bawsinch Reserve by Mr W.D. Gill, the President of the E.N.H.S., on its behalf, to Mr Colin Maclean, the Convener of the Bawsinch-Duddingston Committee since its inception, who received it on behalf of the S.W.T. The E.N.H.S. were responsible for the construction and planning of the loch - a remarkable feat of excavation and engineering - and for financing the project at a cost of £2,000. The dimensions are a length of 40 metres, a width of 20 metres, and a depth from the ground level of 5 metres. It will have two islands, one accessible, the other inaccessible, and a deep and shallow end. It is intended to remove some of the soil to form a banking.

Among those present on this occasion were past Presidents Miss Janet Raeburn and Mrs Elizabeth Farquharson, and the past Chairman of the Lothian Branch of the S.W.T., Mrs Elspeth Hamilton.

The loch is a worthy and fitting memorial to Agnes and Peter Gunn whose interest in Duddingston Loch extended over a period of at least 65 years. Furthermore, it promotes the cause of Nature Conservation and those who originated this project are to be congratulated on their enterprise and foresight.

Mr Colin Maclean informs us that there are already to be found the water boatman and the great diving beetle and that the following plants have been introduced, namely, the greater water plantain, greater bladderwort (from Aberlady Bay), water mint, grey clubrush, branched bur-reed, water crowfoot, and flote-grass.

In the years to come this loch, whose construction was made possible thanks to the Gunn Bequest, will make a significant contribution to the ecological value of the area.

George Carse
President of the Lothians
Branch of the S.W.T.

THE GUNN PHOTOGRAPHIC COMPETITION - 1984

The Gunn Photographic Competition in its second year seems to be a continuing success with 28 entries as compared with 14 last year. The Judge, Mr Macolm Liddle, LBIIP, considered all entries to be of a very high standard.

Results are as follows:

FIRST PRIZE shared between

Ena Gillespie

Slide - Emperor Moth

and

Alex Cleland

Print - Blue Tit at entrance to nest hole

SECOND PRIZE shared between

Donald Manson
Print - Long-tailed Tits

and

Helen Jackson
Print - Ammonite in Skye

THIRD PRIZE

Nora Henderson
Slide - Gulls in flight

George Bell
Chairman of Gunn Committee

The two First Prize winning entries are reproduced in black and white opposite page 19.

RECORDS

It is now more than 50 years since the first edition of the Field Club Flora of the Lothians was published. Prior to printing, information was gathered by the Edinburgh Natural History Society throughout the preceding summers on Wednesday and Saturday outings.

Time passed and the Flora was almost forgotten. Members probably felt that it had become out of date and inaccurate. But now the book is enjoying an 'Indian summer'. Many who are helping with the new Flora of the Lothians are finding it an invaluable record of plants and sites and a most useful reference source.

Will the Society's records of today be a source of information and inspiration fifty years from now? As a Society we are more mobile than in the 1930's and cover more ground in our programme of excursions. During the holidays many of us visit out of the way parts of Scotland that are under-recorded and we have a responsibility to these places too. We can help by increasing information about them.

So, please, ALL members, send any noteworthy records from any part of Scotland - on plants, birds, mammals, insects, seaweeds, shells, or whatever you are interested in, to our Records Secretary, Margaret Mowat, 45 Merchiston Crescent, Edinburgh EH10 5AH.

When sending in your contribution, please give your name and address, the date of the record, the place (with a map reference if possible) and any other details which you consider interesting, e.g. on habitat, etc.

Reference

E.N.H.S. Journal, 1982. The Botany of the Lothians, E.H. Jackson.

WINTER INDOOR MEETINGS 1984

January: The meeting was addressed by Dr George Farrow from the Department of Geology, Glasgow University, who spoke on 'The Natural History of a Pacific Seamount'. Dr Farrow said that after studying how limestone was laid down in Scottish waters he wished to extend his study to other areas and found facilities favourable off the coast of Vancouver. The Seamount, or submerged volcano, which he studied had its origins on ridges under the Pacific in an area roughly parallel to the ridge on which Mt. St. Helens stands. Over millions of years this mount has been carried away by the movement of the earth's plates. By going down in a submersible vessel, he was able to look through a port-hole and get specimens of the rock with a projecting arm. Dr Farrow showed slides taken at different levels. Near the top of the mount where the water is exceptionally clear and light can penetrate to a great depth, pink coral, sea urchins and scallops are amongst the specimens found. In the dark area the lava formation is exposed and crinoids and brachiopods are found. On his return to Glasgow, the specimens which he had collected were examined in detail and, among the findings made, it was noted that magnesium is present in the mineralisation that is taking place.

February: Mr John Murray's subject for the evening was 'Birds of Prey'. He gave an insight into the subject of Falconry, which, for him, started as a hobby and developed into a profession. He is representative to the specialist group on Raptors of the Nature Conservancy Council. He described Falconry as the art of taking prey and pointed out that nothing is done that actually does not take place in the wild, apart from the actual training of the bird. The art of Falconry began in China two thousand years ago and spread to the West, reaching its peak in Europe in the Middle Ages. To train a bird a licence must be obtained and a beginner usually starts with a kestrel or buzzard. Training is a gradual process and requires a great deal of patience. The breeding of hawks is expensive but now artificial insemination plays a big part in this process and hybridisation which was started in the United States is used considerably.

March: 'Nature Conservancy in the Highlands' was the subject chosen by Mr Andrew Currie, Nature Conservancy Officer, Isle of Skye. He took us on a journey, illustrated by beautiful slides, up the east coast of Scotland, round to the West and then to some of the Islands. He showed how industry influenced the environment in the Nigg and Invergordon areas. Land used by the Ministry of Defence is largely unmolested and the natural flora and fauna is protected. In some places development brought about by railway construction has changed the character of the land into something different, but not without merit in many cases. At Ben Wyvis there is pressure to establish a ski-resort but, although not obvious, in this area very rare grasses and sedges are found. Mr Currie showed slides of plants found on sand dunes and cliffs and pointed out how the limestone at Inchnadamph produced very interesting conditions. In the forest of Bein Eighe the Pine Marten and Wild Cat are flourishing and on the islands in Loch Maree Red-throated Divers may be found. Scenes taken on the Isle of Skye were shown and it was pointed out that many Alpine plants were found right down at sea level. In Rhum the Nature Conservancy works along with the National Trust. Woodland has been planted there and ponies and Red Deer are plentiful. It is hoped eventually to re-establish breeding White-tailed eagles. Mr Currie pointed out that there is often conflict between those who wished to have things conserved and those who have to make a living and the answer is not easy to arrive at.

April: The last indoor meeting before the summer break is Members' Night and three of our members gave talks.

Mr Alastair Sommerville spoke about BRISC (Biological Recording in Scotland Committee), explaining that this Committee had been started ten years ago to record flora and fauna in Scotland and to encourage widespread recording. A selection of twelve specimens is taken for each year and observations of these are recorded on forms supplied by the Committee. A good response has been received from the Central and Lowland areas but there is a shortage of observers in the Highlands and Islands.

Miss Jackie Muscott gave an interesting talk, illustrated by slides, on 'Stomach Fungi'. She drew attention to the fact that there is a European survey of this group this year. She showed pictures of puff balls and explained how the spores are distributed. She also showed the Jew's Ear Fungus, which is associated with the elder, the Stinkhorn, the Hoof Fungus and the Eyelash Fungus.

Miss Raeburn spoke about the plants of the Bavelaw marsh taking into account those found in the marsh zone, the swamp and the open water. Slides were shown to illustrate her talk.

October: Mr David Jones spoke on 'Iceland'. He gave an account of a visit made during the summer to study the plankton in the inland water and to compare it with that found in Scotland. He showed slides to illustrate his lecture and pointed out how the landscape had been greatly influenced by volcanic action. The geology of the rock structures is very interesting and he explained how the hot water from the geysers is used for heating buildings in the towns and to generate electricity. In Lake Myvatn the temperature of the water varied considerably from place to place owing to the inflow of warm springs. Pictures of flowers, including the Frog Orchid, were shown and scenes of the Icelandic farms which illustrated some of the problems that had to be faced by the farmers. Mr Jones concluded by saying that the people of Iceland are very keen on conservation and take much interest in their environment.

November: The speaker at this meeting was Mr Christopher Badenoch, Assistant Regional Officer, N.C.C. Borders, who spoke on 'Wildlife Habitat in the Borders'. This region extended over 1800 square miles from the hills which showed the influence of glacial action right down to the water off St. Abb's Head, thus containing many different types of habitat. He pointed out how man had a great impact on the original environment by introducing sheep and draining the low-lying land. Very little of the original woodland has been left and what there is is now confined to the steep areas as land is so valuable. Raised bogs form interesting formations and by taking core samples a good historical picture of the landscape can be built up. Among the unusual plants found in the Border Region are Holy Grass, Frog Orchid, Felwort, Toothwort and Chickweed Wintergreen. Scotch Argus butterflies are found in plenty. At certain times there are many Greylag and Pink-footed Geese and Whooper Swans. Herons are found on the rivers but their eggs are being seriously affected by a poison which has so far not been isolated, though investigations are currently being carried out.

On the coast near St. Abb's Head many sea birds are to be found, and because at this point different currents meet, the marine life is very rich and it is popular with subaqua divers.

December: 'Angus Wildlife' was the subject of the talk given by Mr Jim Cook from Dundee. He took us on a tour of what was for him a well-known and well-loved area and helped us to share his enthusiasm by showing lovely slides. Some of the best areas in the region for rare wild flowers, e.g. Caenlochan, were protected by their remoteness but others, especially near the coast, were threatened by their popularity. Attempts are being made to establish Nature Reserves on the Arbroath Cliffs and elsewhere and this should help to preserve some of the specimens that are now in danger. Angus is rich in relics of the past, such as the Pictish Stones at Aberlemno and hill forts, and the cultivation of the land over a long period has had a great affect on the landscape of today. Mr Cook went into details of the rare flowers found in the area in their different habitats and showed pictures of the abundant fungal life of the area.

SOME IMPRESSIONS OF SHETLAND ECOLOGY

There can be few better ways to visit Shetland for the first time than in the company of members of the British Ecological Society, as I did. Each year the B.E.S. holds a summer field meeting in some area of particular ecological diversity. Having very much enjoyed the meeting in East Anglia in 1983, I was quick to book for the nine-day 1984 meeting in Shetland. Our leaders were Professor David Spence of St. Andrews University, author of the book "Shetland's Living Landscape" and himself of a Shetland family, and Dr Mike Richardson, the Assistant Regional Officer for the Nature Conservancy Council on Shetland, and we benefited greatly from their intimate local knowledge.

The Shetland Islands do not, of course, lie in a box somewhere off the Moray Firth! They are situated about 150 km north-east of John O'Groats. They lie just to the north of latitude 60°N, roughly level with Bergen in Norway, which is actually rather nearer than Aberdeen. There are over 100 islands in the group, of which only 15 are now inhabited. We set foot on just 13 on our trip, but even that meant many ferry crossings; fortunately, internal ferry fares on Shetland are low, heavily subsidised by Shetland Island Council.

As a result of Shetland's northerly situation and its full exposure to Atlantic gales, the growing season at sea-level there, as Professor Spence pointed out, is the same as that at Dalwhinnie at 350 m in Inverness-shire. The consequence is an almost tundra-like landscape over most of the islands, with heather-dominated peat bog covering vast areas. Trees are, for the most part, conspicuous by their absence, although a few small plantations have been established with some success. It seemed strange to spend a morning exploring a rather scrappy, overmature group of small plantations at Kergord on the North Mainland. But these 11 acres or so of Sitka Spruce, Japanese Larch and Sycamore, planted between 1913 and 1920, are the most significant piece of woodland on the islands, and have been fenced by conservation volunteers to encourage regeneration. In the Lothians, we would dismiss such woodlands out of hand as of no interest, but on Shetland they provide one of the very few breeding sites on the islands for birds like the Rook, Wood Pigeon, Willow Warbler and Blackcap. In the Shetland context, these elsewhere abundant species become exciting rarities.

Without woods, many woodland plants are absent (Wood Avens, Dog's Mercury) or are rare introductions (Wood Sorrel, Wood Anemone, Bramble). Many other species are missing because of the islands' northern location and history of isolation; these include Butterbur, Bugle and Golden Saxifrage amongst species I would have expected to find. It seems even stranger to record Field Poppy, Garlic Mustard, Common Ragwort, Foxglove and Ground Ivy amongst others as 'occasional introductions'. To emphasise this point, our party made a special visit to Boddam on the South Mainland to see Herb Robert growing on the shingle there, its only site. (This latitude effect shows even more markedly with butterflies; the Large Heath is apparently the only species to breed regularly on the islands.)

In their isolation, the populations of several species have developed into recognisable subspecies. Most notable (and noticeable) is Shetland Red Campion (*Silene dioica* ssp. *zetlandicum*), whose startingly deep red flowers are a beautiful aspect of the Shetland landscape. Amongst animals too, some Shetland forms seem to be bigger and better, with Shetland races of the Field and House mouse, and *zetlandicus* subspecies of both the Wren and Starling. Presumably the cold climate has selected for these larger, more heat conserving, forms.

But for all that, it was not the absences of plant species but the profusion of those present which impressed me on the islands. Partly as a result of the climate, the islands have never been intensively cultivated and so many fine meadows remain, rich in colour and diversity with Ragged Robin, Yellow-Rattle, Marsh Marigold, Heath Spotted Orchid and Shetland Campion. It was disturbing to hear that, when one of the finest of these meadows was recently declared as a Site of Special Scientific Interest, it was promptly largely ruined by drainage; perhaps caution is now advisable before any others are notified as SSSIs. Some roadside verges, notably around Scousburgh, South Mainland, were a riot of colour, while the relative lack of disturbance means that rare plants can still hang on, such as Oysterplant in some shingle beds and Sea Pea in one sand-dune system.

The northern latitude, combined with more local features of climate and geology, produces an arctic flora at several sites. Our visit to Ronas Hill, which rises to 305 m, was in a thick mist which left us finding our way round by compass. The weather seemed appropriate for this exposed hill where wind speeds can exceed those on the summit of Ben Nevis. On the upper slopes here, exposure has produced an open, stony, fellfield community with plants like Stiff Sedge, Three-leaved Rush, Alpine Lady's-mantle, Mountain Azalea, Dwarf Birch and Sea Plantain. In places, the Woolly Hair Moss (*Rhacomitrium lanuginosum*) forms a mossy mat. Regular freezing and thawing has caused ice-slip or solifluction, so that terraces of vegetation parallel to the contour lines are interspersed with areas of open soil. I have never seen solifluction terracing better displayed than here.

Even more dramatic fellfield is to be seen on the Keen of Hamar on Unst, at barely 50 m above sea-level. Here, the action of frost shows most clearly in soil stripes, where freezing and thawing has sorted the larger stone particles into clear bands running down the gentle slope. It seems ironic that the Keen is a National Nature Reserve, since much of it is a desert with less than 20% plant cover. This, however, is part of its uniqueness, resulting from its serpentine derived soil rich in heavy metals. It may be that the vegetation is limited by the high concentrations in places of toxic minerals like chromium and nickel. More probably, it is a response to the high levels of magnesium compared with very low concentrations of calcium, potassium, nitrogen and phosphorus, as has been shown by the work of John Proctor, David Slingsby and others. Additional evidence for this comes from the fact that a substantial part of the Keen's unique vegetation, outside the reserve, has been lost as a result of the application of conventional agricultural fertilisers.

The plants of the Keen were fascinating to explore; Moss Campion, Northern Rock-cress and Norwegian Sandwort were amongst the arctic-alpine specialities. The foliage of many of the plants was a deep purple colour, which may be a response to phosphorus deficiency, while the Kidney Vetch flowers were unusually pale, and the Sea Plantain was in a curious broad-leaved form, once recognised as *Plantago edmonstonii*. The latter was named after Thomas Edmonston, a botanist from Buness just down the road from the Keen, who discovered the sandwort there and also another plant, which he named *Cerastium nigrescens*. Today this Shetland chickweed is more usually recognised as a subspecies of the Arctic Mouse-ear (chickweed) (*Cerastium arcticum* ssp. *edmonstonii*), which is unique to this outcrop of serpentine. My impression of these plants was that they looked very different from the *C. arcticum* I know in the Cairngorms, although some plants nearby, resembling Edmonston's variety *acutifolium*, were much more similar to Cairngorm's plants. Perhaps the story of Edmonston's chickweed is yet to be finished! I was perplexed, too, to see the Stone Brambles on the Keen serpentine; they were much smaller and glossier leaved than normal Highland stone brambles and had no obvious stolons. It was interesting to hear from David Slingsby, who has done much work on this serpentine, that he has only once seen one of these brambles in flower. It had pink petals and developed into a dark red fruit, all characters more suggestive of the arctic bramble (*Rubus arcticus*), a species only once found in Britain (on Beinn a'Ghlo in Perthshire) and never since refound. So could a long-lost species in fact be surviving in Shetland? It would be nice to think so.

But of course the Shetland Islands are most famous internationally, not for their plants, but for their birds. Indeed, even on the Keen, the distribution of one plant, Hoary Whitlow-grass, seems to be related to hummocks where Arctic Skuas sit. Both this skua and its larger relative, the Bonxie, were very much in evidence on the islands. Even as we approached Lerwick on the "blue canoe" (as locals apparently call the ferry "St. Clair"), we were having close views of Bonxies. Over 3,000 of these birds nest on the islands, some 96% of the British population. They are most prevalent on Fetlar, Noss and at Hermaness on Unst. Fortunately for us, their chicks were well-grown by the time of our visit, and so the worst of their aggression was over. Even so, we were subjected to many unnerving bombing raids as we encroached onto their territory. Shetland also holds some 70% of the U.K. population of arctic skuas, and we saw these handsome aerial pirates on several ferry crossings as they hounded luckless puffins and guillemots into dropping their catch of fish. Our visit to the R.S.P.B. reserve on Fetlar provided closer views of them, as well as marvellous views of Whimbrels, whose rich, bubbling calls filled the air. One lochan in the reserve produced a view of five Red-throated Divers, while from the minibuses we were able to watch clearly a Red-necked Phalarope feeding along the gravelly shore of the Loch of Funzie. (Shetland hosts 90%+ of British Whimbrels, 60% of Red-throated Divers, and some 50% of Phalaropes.) We were even treated to a very distant (and less than convincing) view of what we were assured was a female Snowy Owl, the only specimen remaining on Fetlar at that time.

The rich fish stocks around Shetland add greatly to its wildlife interest in supporting large numbers of fish-eating birds and mammals. Four thousand each of grey and common seals breed here (20% of the British population of the common), and we saw both frequently. On a boat trip around the islands between Fetlar and Unst, Common Seals porpoised exuberantly in front of our boats, and at the West Pool on Mousa we watched them playing and courting in the water. Around the Pool, we were able to creep close to Tysties (Black Guillemots), while on the other side of the island, within the famous Broch of Mousa and amongst the boulders on the shore below, we could hear the crooning of Storm Petrels nesting amongst the stones. At Fitful Head on South Mainland, on Noss, and at Hermaness, we visited spectacular seabird colonies with Kittiwakes, Fulmars, Guillemots, Gannets and Puffins which at Hermaness were so numerous and tame that they popped out from burrows beneath our feet. Again at Hermaness, sea mist reduced our visibility, so we had only occasional glimpses of the 5,000+ pairs of Gannets which now nest on the cliffs there, having first arrived in 1920. The lonely Black-browed Albatross that has joined them there since 1972, a stray from south of the Equator, was lost from view.

Amongst all these wonderful wildlife impressions, we took time also to look at some of the recent changes on the islands. We were guests of B.P. for a day at the Sullom Voe Oil Terminal. Despite their blanket ban on all photography, our impressions of the terminal were far from unfavourable. Real efforts seem to have been made with safety precautions, extensively revised after the "Esso Bernicia" disaster and mercifully not tested since. In general, the terminal is not an eyesore, especially as its site was chosen to be visible from very few places. Major work is now underway to rehabilitate the obsolete construction villages and, although that is only creating another sort of artificial landscape, it should not obtrude too much scenically. Attempts have even been made to soften the environment around the terminal by planting trees, but these efforts have been largely foiled by more than one thousand Hooded Crows roosting within the terminal, which have torn the saplings apart twig by twig for nesting material. Clearly much effort, thought, and money has gone into all this environmental work, although whether this care would have been so evident without the active attentions of conservationists is, of course, questionable.

Sadly, however, we left Shetland with the impression that rather less environmental concern is being shown by Shetland Island Council. It is understandably trying to spend its considerable oil wealth to the benefit of the islanders, but is doing so in ways that often seem over-hasty, ill considered and unsympathetic. New roads are being crudely imposed on the landscape. Agricultural "improvement" schemes seem piecemeal and arbitrary. Now a plan to extract peat for a peat-fired power station could threaten moorland bird habitats, although the islands are already well-provided for electricity. It seemed to me almost as if the islanders and their councillors have lost all pride in their islands, a feeling which is certainly reflected by the poor state of tourist facilities on the islands, with hotels in general unwelcoming and over-priced. With a little care and consideration, all these developments could blend into the resilient Shetland landscape as unobrusively as has Sullom Voe. It would be tragic if precipitate use of the islands' new-found commercial wealth were allowed to spoil for ever the remarkable natural wealth of wildlife and landscape, which, for all my misgivings, still make these islands so fascinating and spectacular to visit.

(I acknowledge with grateful thanks a grant from the Ian Sime Bequest Fund of the E.N.H.S. towards this trip. The meeting was also generously subsidised by the British Ecological Society and B.P. Members wishing to know more about B.E.S., its publications, meetings, and Small Ecological Project Grants scheme, should write to the Society at Burlington House, Piccadilly, London W1V 0LQ. I should emphasise that opinions expressed in this article are my own, and not necessarily those of our leaders or the B.E.S.!)

M. Scott

FARMING AND CONSERVATION

1. An evening in Boghall Glen

A visit to Boghall Glen was arranged for the evening of Wednesday, 4th July and a group of twenty met at Boghall Farm on the Biggar Road at 18.30 hours. The Boghall burn runs through the farmyard where there are the remnants of a mill pond and race. The burn collects water from Boghall Glen which faces east and is surrounded by Caerketton, Allermuir, Castlelaw and Woodhouselee hills. The party followed the cart track up the glen which was initially steep up from the steading but then became a gentle climb up to the foot of Allermuir.

Boghall Farm is operated by the Edinburgh School of Agriculture and is used both as an educational unit and as a facility for research and development. Another function of the School of Agriculture is advisory, whereby farmers and growers in south-east Scotland are provided with an advisory service on various technical aspects of husbandry. As a result of the 1981 Wild Life and Countryside Act, this advisory remit was expanded to include the provision of advice on wild life conservation.

At the same time, there is a wish to expand involvement in nature conservation. Whereas in the past efforts have been concentrated on nature reserves and on Sites of Special Scientific Interest, there is now a desire to encourage a widespread awareness of the scope for wildlife protection amongst farmers and landowners generally.

Arising out of this it was considered that Boghall Farm should be surveyed so as to establish what scope it offered in the shape of wildlife habitats and that a preliminary conservation management plan should be prepared. This has now been done and on our walk up Boghall Glen we were joined by Dr Cameron Easton of the Nature Conservancy Council and Dr Murray Black, Farms Director of the School of Agriculture. On any farm it is likely that a farmer and a conservationist will see things from different points of view and that some conflict of interest will arise. In this instance, Dr Easton identified certain areas which hold wildlife interest or potential and put forward proposals for their protection or encouragement, whilst Dr Black was able to react to these from a farming viewpoint.

Boghall burn starts as a spring on the slopes of Allermuir. Nearby are the remnants of a small artificial pond. These two features combine to form an area of marsh in which plants such as Brooklime, Ragged Robin, Lesser Spearwort, Grass of Parnassus and various sedges have been recently recorded. Such areas are scarce in the Pentlands and for this reason and also as a potential breeding area for wading birds it is an area considered worthy of preservation. Suggestions for future management would include fencing and restricted grazing and if possible some excavation in the pond to create an area of surface water. The partial loss of such a small area of grazing would hardly be missed by the farm but the cost of erecting and maintaining a fence would be considerable. In the time taken to clean out the pond, an excavator could as easily open a ditch and drain the wet patch completely. Thus different points of view.

Further downstream, Boghall burn flows through a steep-sided valley with boggy side tributaries. This area is unsuitable for cultivation and carries scrub, gorse and bracken and is grazed by cattle and sheep. Management proposals for this area are either to leave things as they are or possibly to restrict grazing so as to benefit plant species other than the grasses. Here again, fencing costs would be the main restriction.

Above the burn on the north side, most of the glen is now improved grazing and the high stock-carrying capacity of this improved grass was well in evidence with many sheep and cattle grazing there. A part of this area was recently converted from a gorse-covered hillside and a plea was made for any surviving gorse in the glen to be left to provide habitat for such birds as Wheatear and Stonechats. There is obvious conflict of interest here as areas of gorse and of bracken are not popular with shepherds.

Another contrast was with a large area of heather on the south side of the glen on which only a few sheep were feeding. This heather is likely to remain undisturbed and will provide variation in wildlife habitat.

Further down the glen three fields were seen, each surrounded by a windbreak of trees planted some 150 years ago. Growth in the lower parts of the trees is now limited to the main trunks and their effectiveness as a shelter for stock is minimal. The trees are quite large and cause appreciable shading and competition to the adjacent crops. The question was posed as to what should be done with such trees. Leave them as an attractive landscape feature, pollard them or remove and replant.

Near Boghall Farm the burn passes through a wooded ravine which although modified by felling, is thought to be ancient, predominantly deciduous, woodland. It was suggested that this area could well be left alone or else improved by the removal of introduced conifers and rhododendrons and the ground flora enhanced by thinning in small sections so as to allow more light penetration. The area plays no part in the functioning of the farm and such improvements would depend on the availability of labour.

Finally, the old mill pond at the steading was seen to be largely silted up. It was suggested that this could be improved greatly to provide habitat for a wide divergence of plant and animal life. This would involve dredging and bank grading and the removal of a dense tree surround followed by judicious replanting and seeding. Here, again, the pond area plays no practical part in farm operations and whilst the changes could improve the general amenity there is no financial incentive for what would be a costly operation.

Dr Easton stressed throughout that this was as yet a preliminary survey and that any proposals were up for consideration and discussion. More detailed records of plants and birds currently present in the area mentioned would be beneficial so that the effect of any further changes could be followed.

W.D. Gill

2. Outing to Oldcastles Farm, near Chirnside

Oldcastles, near Chrinside, was visited on a perfect July morning. Much has been heard over the past few years about the active role the farming community might play in furthering conservation but this visit, and another a few days earlier to Boghall, were the Society's first opportunity to hear the problems discussed and to see conservation ideas put into practice.

Mr Bruce Cowe farms Oldcastles and two neighbouring farms, and he most kindly spent the morning driving us round his fields, showing us what has already been achieved, and talking of his plans for the next few years.

The first stop was beside some hedges which, due to their age and to occasional gaps, were no longer stockproof. A length of the hedge had been treated by layering which is a time consuming and difficult job in such an old hedge, thought to be about 150 years old. There was a danger that such thick branches would break completely or die back but the layering had been successful, the hedge had sent out considerable new growth and was once again becoming stockproof. However, because of the time involved not more than a limited amount of hedge could be layered each year. Gaps in the hedges, as well as a new length, had been planted and the young trees looked flourishing. The varieties being used are Beech, Hawthorn, Oak, Sloe, Field Maple and Scrog (Wild Crab Apple), this last tree having been common in the past in Berwickshire hedgerows. It was pointed out that the costs continue even after the planting, for hand weeding will be required for a year or two, and the young trees need to be protected from browsing by farm animals, and Beech seedlings are particularly vulnerable to damage by hares.

A small plantation of softwood trees has been planted giving diversity to the landscape, a woodland habitat, and a degree of shelter to the adjoining fields. It is Mr Cowe's intention to plant a hedge round the plantation which would then remain when the trees become due for felling in 25-30 years time.

At a distance stood an old shelter belt which had long outgrown its usefulness, for the trees were now fully grown and afforded no shelter at low levels where needed. Additional planting of small trees and shrubs has been planned to restore the sheltering effect while the fully grown trees can remain for their appearance.

Flowing through the farm is the Billiemire Burn which drains what little remains of the Billie Mire. The burn feeds an area of wetland covering a few acres and produces a conflict of interests. As a good farmer, Mr Cowe would like to drain the area and put the land to profitable use, but as a good conservationist he is leaving the area undrained. In part of the mire he has dug a pond, leaving an island in the middle. Interesting grasses and mosses have been found in the area and Red Admiral butterflies are often seen on the island. Waterfowl have started to come to the pond only to be decimated by Mink, so mink trapping has had to be started too. Another misfortune was that Roe Deer ate all the willows and alders that Mr Cowe had planted near the pond!

From the elevation of the embankment of a disused railway line we had a good view over the farmland. Acres of peas were soon to be harvested; a field of barley showed an area of rook or crow damage. This led to a discussion on the use of pesticides and the value of bird scarers. It seems that while the farmer does not mind the occasional caterpillar on his green vegetables, the general public are much fussier and it requires only a few creepy-crawlies to ruin his market! Many types of bird scarer have been tried all over the country but the birds become accustomed to them within a fortnight. The railway embankment has not been developed or improved in any way. It is being taken over by scrub vegetation which is attracting many small birds, while the slopes carry a good variety of plants and are covered with flowering primroses in the spring.

During the discussions we had with Mr Cowe while going round the farm, he mentioned that the acreage of trees had increased from 14 acres in 1950 on Oldcastles to 35 acres on the three farms in 1984; that oak seedlings which have a reputation for slow growth grow as fast as the other seedling trees on his soil; that fencing at 62p a metre is half the cost of planting and caring for a new hedge; and that mechanical hedge trimmers are a boon to the farmer who wishes to keep his hedges as hand trimming is too time-consuming; that it is easier to promote conservation when a sporting interest such as rough shooting is involved; and that until very recently there has been no advisory body to assist farmers who wish to help in conservation.

E. Farquharson

BINGS - A WILDLIFE REFUGE NOT TO BE IGNORED

It might be considered that the most prominent landscape features of the West Lothian countryside are the red, and sometimes black, shale bings which are the final and long lasting remains of a once thriving mining industry in the Central Belt of Scotland. Prominent, not necessarily for their beauty, but for their size, shape and colour, these man-made features are virtually all that now remains of a vital part of Lothian's industrial history.

The tips are largely the legacy of uncontrolled mineral extraction operations and other industrial processes initiated during the Industrial Revolution. Over 6,000 acres of land have been laid waste in Lothian as a consequence; much of this is in West Lothian and Midlothian, which reflects the former importance of oil shale and coal mining in the economy of these districts.

Although coal mining is still carried out, the oil shale industry declined in the early 1960's, after a period of over one hundred and twenty years. Some of the waste shale tips are certainly over a hundred years old and, unless too toxic to allow nature to colonise their slopes, the tips can hold a wealth of surprises for the naturalist who has not been previously tempted to venture onto such sites.

On shale bings, the success of plant establishment is dependent upon the physical and chemical characteristics of the substrate material. Essential nutrients, such as available nitrogen, may be absent while the presence of other elements or chemicals may severely inhibit plant colonisation. Physical problems, too, may restrict water availability, while slope stability, erosion, surface temperature extremes and compaction may also provide constraints to natural vegetation establishment.

There is an active programme of rehabilitating these derelict sites - by levelling, contouring and landscaping followed by the establishment of grass and trees, according to the designed after-use. The techniques for rehabilitating mineral spoils have become more sophisticated and exacting as a consequence of research and practical experience in recent years. But, while the engineering works can be impressive, the establishment of a vegetative cover provides a significant scientific challenge with the objective of creating a self-sustaining system on what was previously a sterile, infertile and perhaps toxic substrate.

An excellent example of a shale bing which illustrates the various stages of natural colonisation and also by comparison, the establishment of vegetation cover by artificial means, exists on the north side of the B792, between West Calder and Addiewell, in West Lothian. Known as the 'North Addiewell Bing', this site can be safely visited and although not necessarily unique, it has a diversity of habitats that makes it a surprising wildlife refuge, being an 'island' in an otherwise predominantly agricultural area. The site was partially reclaimed in 1979, to prevent its northern slopes slipping into the Breich Water, but as a consequence of a survey of the site before engineering works began, much of the natural vegetation has been retained.

It is believed that the dumping of shale on the site ended about 50 years ago, which means that much of the bing originates before this time. This is a feature that is reflected in some of the vegetative communities that have developed. In addition, the variable nature of the shale and the irregular dumping pattern has created a wide variety of ecological influences which are now reflected in the range of species and communities that have developed on the bing.

The first plants to establish depend upon the chemical characteristics of the shale. If toxic, certain mosses, lichens and algae may be the only colonisers capable of survival. As the organic material builds up, however, and toxicity is leached out, more demanding plants will eventually take their place. On non-toxic shales, colonising plants which are successfully wind dispersed, such as Rosebay Willowherb, will rapidly establish on freshly tipped shale. Both examples of pioneering vegetation can be found at North Addiewell, where both toxic and freshly disturbed shale exist.

Of greater interest are the next stages of succession, as more demanding species find niches suitable for their survival. The pioneer species give way to a herb rich grassland community which through time and the death and decay of plants influences the acidity of the surface shales, as organic material builds up. This in turn influences the balance of species and after, say, 60 years an acidic grassland, dominated by Common Bent and Fescue grasses with a more restricted range of herbaceous species, takes its place.

Beyond this time, as a consequence of increasing acid conditions and a long period free of disturbance, an interesting grass heath community can develop with the loss of the flowering plants found at the earlier stages of colonisation. At North Addiewell, this is perhaps the most remarkable community with healthy stands of heather on the moister, northern slopes, with associated ferns and mosses, particularly *Polytrichum* sp, and perhaps the most surprising plant of all, the Stag's Horn Clubmoss. To find such a community in the lowlands, on what is nothing more than a spoil heap of inorganic debris, amongst so many other communities at various stages of development, adds to the excitement of these sites.

Nothing, however, is static; Birch and Willow can invade at virtually any time according to the proximity of a seed source. Areas of scrub and woodland are thus also developing at North Addiewell, with Rowan and some Oak making an appearance and also Sycamore beginning to show its vigorous character. The climax vegetation will clearly be woodland and no doubt this will become dominated by the ubiquitous Sycamore in time.

This is nature's achievement over perhaps one hundred years. What man can achieve is less impressive if the species composition of the rehabilitated areas are examined. But, even here the artificial vegetative structure established only five years ago is changing and herbs, Broom and Willow are already showing their colonising abilities, and invading what was a simple stabilising grass mixture, established with inorganic fertilisers. This vegetation is perhaps the most unstable and without further nutrient inputs, the succession story will be repeated but in a way less easily described because of the disturbance and substrate changes that man has influenced.

There is perhaps an unfortunate planning objective, supported by financial aid, to rehabilitate any site that is not economically productive, does not comply with the natural contours of the landscape, or looks disorganised and untidy. The vegetation of bings, particularly the older ones, can provide a vital contribution to wildlife conservation, especially when they occur as 'islands' in an otherwise productive agricultural area. Habitat diversity, and plant species variety are obviously accompanied by invertebrate and vertebrate colonisation of equal richness and if left alone, nature will itself reclaim these waste lands, to produce complex self-sustaining, productive ecosystems that cannot be achieved by even the most astute applied ecologist.

North Addiewell is perhaps a prime example of nature colonising waste shale, certainly not all bings are as old or at such an advanced stage of succession. Their conservation value, however, should not be ignored, and as a wildlife refuge they can be a very worthwhile place to visit - warts and all.

J.C. Sheldon
Regional Ecologist

THE BLACK LOCHS

During a weekend's dragonfly-hunting in the Oban area at the end of July 1983, chance took us to the Black Lochs, by Connel, Argyllshire. The weather was mainly dull after heavy overnight rain and a strong wind was blowing. A search in the shelter of the reeds in the south-west corner of the lochs revealed some blue/black Damselflies. Examination in the hand showed they were not the expected species, *Enallagma cyathigerum*, but belonged to the genus Coenagrion. Closer examination proved them to be *Coenagrion pulchellum*. This was an exciting discovery for its known distribution is limited to a scattering of sites in the south of the British Isles and a few sites in Dumfries and Galloway. Further searching produced the expected species, *Enallagma cyathigerum*.. Other species present were *Ischnura elegans*, *Lestes sponsa*, *Libellula quadrimaculata* and *Sympetrum nigrescens*.

On 4th July 1984, in calm weather and bright sunshine we returned. Dragonflies hunted in the glades of the Oak woods as we approached the loch from the south-east. The feeder burns were an astonishing sight. Dozens of iridescent "fairies" fluttered and danced over the water flaunting their dark blue wings and shiny emerald green bodies. They were, of course, *Calopteryx virgo*, the Beautiful Demoiselle which, though common locally in Argyll, is not usually seen in such numbers. It is mainly a southern species in Britain. We reached the lochside over tussocky Bog Myrtle and, in a bay sheltered by Water-lily pads and a thin screen of Reeds, Emeralds were flying. They were egg-laying in the open water. Seconds later we were examining a caught specimen to find to our delight it was *Cordulia aenea*, the Downy Emerald. This is also a southern spieces. Here was a breeding population half-way between the only two previously known breeding sites in Scotland, one in Stirlingshire and the other in Inverness-shire.

While in the act of catching it, another species of dragonfly was spotted. This closely resembled the Common Aeshna, *Aeshna juncea*, which occurs widely in Scotland but it was markedly shorter and very blue. Excitment was by now intense. We'd been looking for a small blue Aeshna species, *Aeshna caerulea*, for years and surely this was it. The net was again wielded effectively and the prize was in the bag. The briefest examination showed yellow on the thorax. What a disappointment! It couldn't be *Aeshna caerulea*. Anyway the habitat was all wrong. Perhaps it was just an abnormal *Aeshna juncea*. Retaining the specimen for further examination we returned to camp. Sadder but wiser, we set about trying to discover the stranger's identity. We checked the wing venation and found it wasn't an Aeshna species at all. Bewildered, we pored over the books and checked all the details till realisation dawned that we had found *Brachytron pratense*, the Hairy Dragonfly. This is another southern species which hadn't been previously recorded north of Durham, and so it was the first Scottish record. Other additional species seen were *Pyrrhosoma nymphula*, the Large Red Damselfly, and *Cordulegaster boltonii*, the Gold-ringed Dragonfly. Because of other commitments we had to leave the area but determined to revisit it later in the year. If there were four southern species there in July, what about other southern species that fly in August and September? *Aeshna cyanea*, the Southern Aeshna has been recorded in recent years at each end of the Great Glen. Surely it must be present at the Black Lochs.

One wet dismal Friday in August we 'phoned Weatherline. "How's the weather in the Oban district?" "Glorious. Hottest place in Britain today," was the reply. "What will it be like on Saturday and Sunday?" "Hot, dry and sunny." This time we started at the north-east end of the lochs. The early Dragonflies were past and only the usual small species were seen. Soon an inevitable feeling of anticlimax took grip but we decided we'd walk along the banks to the far end of the lochs. Between two of the lochs is a narrow canal-like channel. Bob voiced his opinion that it looked perfect for Aeshna species and there was something wrong if they weren't there. As on cue they appeared. Two sailed past tantalizingly out of reach. No *Aeshna juncea* these, as the thorax was green and the abdomen predominantly blue. They vanished and the next hour or so passed with only a few glimpses of disappearing dragons. Eventually, while exploring further along the bank, Bob spotted one nearby and caught it. It was indeed the Southern Aeshna, *Aeshna cyanea*. After examining and photographing it we let it go. Another additional species seen that day was the Black Darter, *Sympetrum danae*. Our tally to date is 13 species of odonata of which 5 have a mainly southern distribution. The Black Lochs probably hold the Scottish record for numbers of species of Dragonflies. Nine or more species breeding at a Scottish site are sufficient to merit S.S.S.I. status.

Of the great variety of aquatic plants that occur there we especially noted the very conspicuous Saw Sedge, *Cladium mariscus*, the characteristic species of the East Anglian fens. It occurs in a few Scottish sites mainly in the West Highlands. Growing amongst the Bog Myrtle, *Myrica gale*, was Gipsywort, *Lycopus europaeus*. It, too, is commoner in the south.

On our latest visit in mid-September we saw on the surface of the water an unfamiliar pond skater. It was exceedingly slender and only about 1 cm long, and with its long legs it looked like an aquatic stick-insect. It was the Water Measurer, *Hydrometra stagnorum.* This is yet another southern species. It has been previously recorded in Scotland from sites in Dumfries and Galloway, Kintyre and from Loch Ard in Perthshire.

Nearby lochs in Argyll have been visited but have not yielded the same wealth of southern species. The Black Lochs seem quite remarkable in this respect, almost a little piece of England.

E.M. Smith
R.W.J. Smith

JULY IN SUTHERLAND

Twelve pairs of binoculars and two telescopes were scrupulously trained on the waters of the lochan. The French car drew in. "Des plongeons?" they asked. We said that we were indeed watching a pair of Black-throated Divers and they joined us with interest. There is no homely word in the French language for 'bird-watcher' and those French interested in birds are more likely to clutch a shotgun than a telescope. Monsieur told us how, as a true break from Paris, they liked to spend time each year in the Northern Highlands.

Our group went there in July, primarily to look at birds, and we too were captivated by this splendid region which contains some of our biggest tracts of montainous country and moorland, oldest rocks and a long coastline deeply indented by sea lochs and skerries, carrying the influence of the warm Atlantic drift deep into the Northern glens. It has an oceanic climate, humid and mild.

In the small front garden of our guest house in Durness we counted eleven spikes of the beautiful Northern Marsh Orchid (*Dactylorhiza purpurella*) and in the main street of Durness we found Kidney Vetch (*Anthyllis vulneraria*) and Grass of Parnassus (*Parnassia palustris*), the taller species being recorded by the B.R.I.S.C. (Biological Recording in Scotland Committee) as one of 20 species chosen for monitoring during 1984. Near at hand, there was an ungrazed meadow of machair marshland, a mass of flowers, purple, pink, yellow and white with sweet grasses, clovers, vetches and composite flowers. Members of the Edinburgh Natural History Society among our group decided to concentrate on the flora and take note of the diversity of habitats in our holiday area.

West Sutherland is a wild expanse of knobbly gneiss country looking like rock buns dumped on a tray and vast bogland dotted with innumerable lochs and lochans of all sizes. There are isolated mountain tops with cliffs, screes and wet 'flowes', while in spring streams and waterfalls carve deep clefts in the rock. Rivers are short and numerous, there are pools in which trout and salmon lie and lovely beaches of shining sand. Behind the sand are the maritime grasslands; marram grass stabilises the sand dunes and wind carries fine shell sand landwards to establish the machair with its abundance of herbs and short grasses. Where there are outcrops of limestone as at Durness, the flora is very rich in contrast to the sterility of the acid bogland. There are few trees, mostly scrubby birch at low altitude, though we saw some conifer plantations near Tongue. Coastal headlands have maritime heath, and alpine plants grow at sea level in these northern latitudes. The coastal cliffs are the nesting sites of countless sea birds whose droppings nourish a very rich vegetation. Geographically, it is very complex and takes a lot of sorting out.

On our first day we explored a sandy shore at Balnakeil Bay and the cliffs of Faraid Head. The clean sand is beautiful but there are few shells and no birds (or bathers). It is unusual but here are large dunes, less extensive but similar to Forvie Sands in Aberdeenshire. Ragwort, Sorrel, Tormentil, Orache species and Bird's-foot-trefoil grow among the marram grass, home of the Meadow Pipit and Sky Lark and the Common Blue butterfly. On the rocks above the beach we found Sea Mayweed (*Tripleurospermum maritimum* ssp *maritimum*) with its slightly succulent leaves, sticky with salt spray. It has larger flowers than the Scentless variety (*Tripleurospermum maritimum* ssp *inodorum*). We found both Sea Plantain (*Plantago maritima*) and Buck's-horn Plantain (*P. coronopus*), Common Scurvy-grass (*Cochlearia officinalis*), Sea Campion (*Silene maritima*), Red Campion (*S. dioica*) and Thrift (*Armeria maritima*). On the cliff were Scots Lovage (*Ligusticum scoticum*), Wild Carrot (*Daucus carota*), Meadow Vetchling (*Lathyrus pratensis*), Lesser Knapweed or Hardheads (*Centaurea nigra*) and Greater Knapweed (*Centaurea scabiosa*), a lovely flower, and to our delight Globe Flower (*Trollius europaeus*). It is surprising what will grow where sheep can't nibble.

We spent some time watching the Puffins. One grey juvenile appeared from its burrow. Many Fulmars were nesting on the ledges; they had all well-grown downy young. We admired their stiff-winged flight as they used the up-draught: our photographers lay flat on the turf, cameras ready. Off-shore were tysties (Black Guillemots), bonxies (Great Skuas), Gannets and a few Terns; female Eider with ducklings swam close to the rocks. A few Razorbills and Guillemots still remained on the cliff. We saw two Ravens. Four baby Linnets being fed were perched on a fence and the grass was alive with Wheatears, but no males. Perhaps they were moulting or do they move on before the young are ready? We sat quietly and watched a group feeding on larvae in the scattered remains of a sheep's carcass. There were plenty of gull and corvid scavengers as well as Buzzards which we had seen earlier that morning and no bones were left. Incidentally, we met great hostility to the eagle in the locality. Why should it be a protected bird, they ask, when you see it lift the lambs and drop them on the rocks? Questioning however elicited no eye-witness account; the eagle appears inevitably to take the blame when missing lambs have to be accounted for. Sheep rubbings added to the erosion begun by innumerable rabbits on sandy slopes. There was a particularly bad patch just east of Durness.

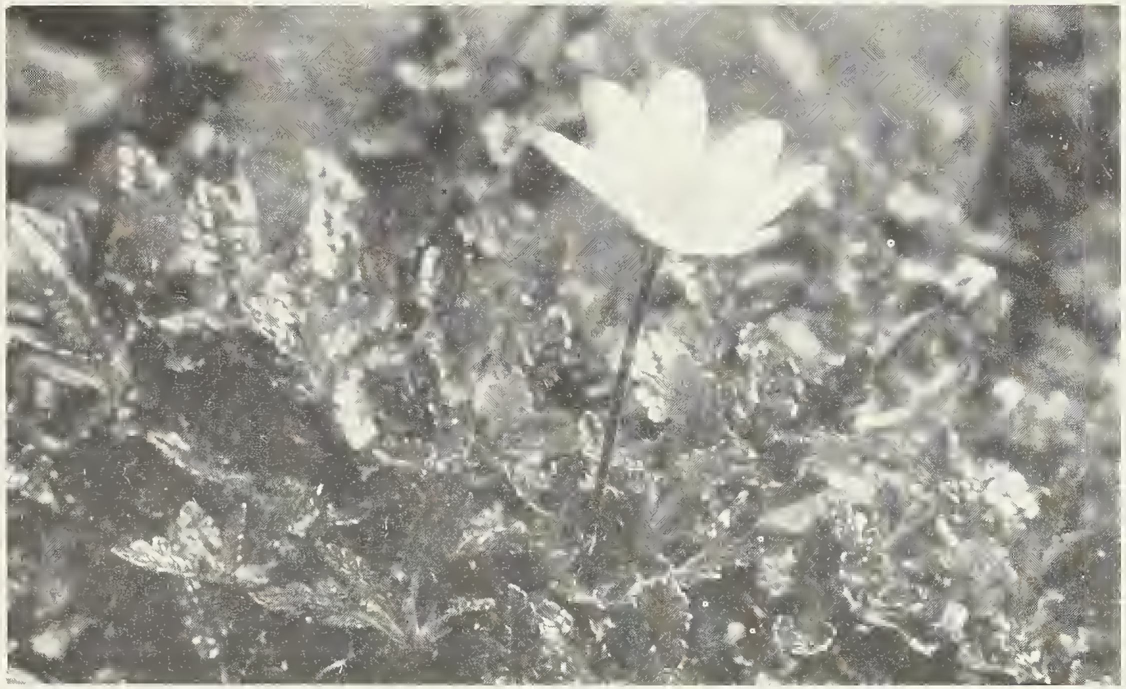
On the grassy slopes behind the cliff were hundreds of Common Spotted Orchids (*Dactylorhiza fuchsii*) and Field Gentian (*Gentianella campestris*) was just coming into flower. Many plants had pure white flowers. There were several species of Eyebright (*Euphrasia* spp) on the close-cropped grass, and Fairy Flax (*Linum catharticum*) seemed to be everywhere. Silverweed (*Potentilla anserina*) and Grass of Parnassus and Northern Marsh Orchid were in the wetter areas and here the flower heads of Self Heal (*Prunella vulgaris*) were almost as large as orchids. There was much Creeping Willow (*Salix repens*).

Further inland the moorland vegetation contained Bog Myrtle (*Myrica gale*), Cross-leaved Heath (*Erica tetralix*), Cotton grass sp (*Eriophorum* sp), the unpalatable Deer-grass (*Scirpus cespitosus*) - a sedge, not a grass, Mat-grass (*Nardus stricta*) and hummocks of bog mosses. There were thousands of spikes of Bog Asphodel (*Narthecium ossifragum*) and Heath Spotted Orchids (*Dactylorhiza maculata*), Bogbean (*Menyanthes trifoliata*) was plentiful in the wet flowes as well as Common Butterworth (*Pinguicula vulgaris*) and Sundew (*Drosera rotundifolia*). There was also Dwarf Birch (*Betula nana*) and Dwarf Willow (*Salix herbacea*). Occasionally we saw Stonechat and Whinchat and a lot of Meadow Pipit. Some scree slopes were covered with Yellow Mountain Saxifrage (*Saxifraga aizoides*).

The peats had been cut and neatly stacked to dry. Trenches were often a metre deep. In a few were exposed the white skeletons of tree roots from ancient woodlands. Here is the beginning of a vast blanket bog which stretches inland across Sutherland to Caithness, larger even than Rannoch Moor. It is a desolate

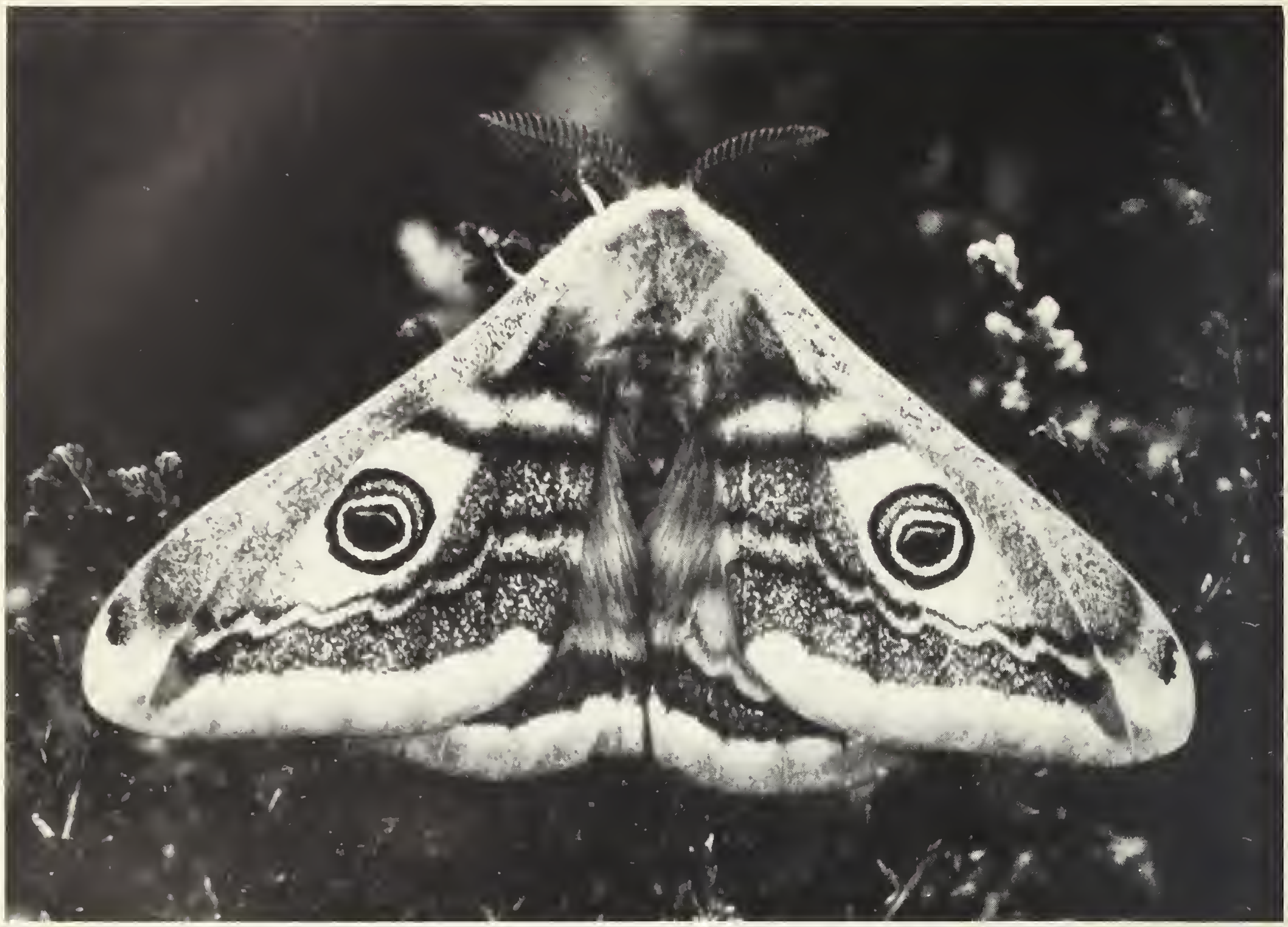
Heath Spotted Orchid

Purple Oxytropis

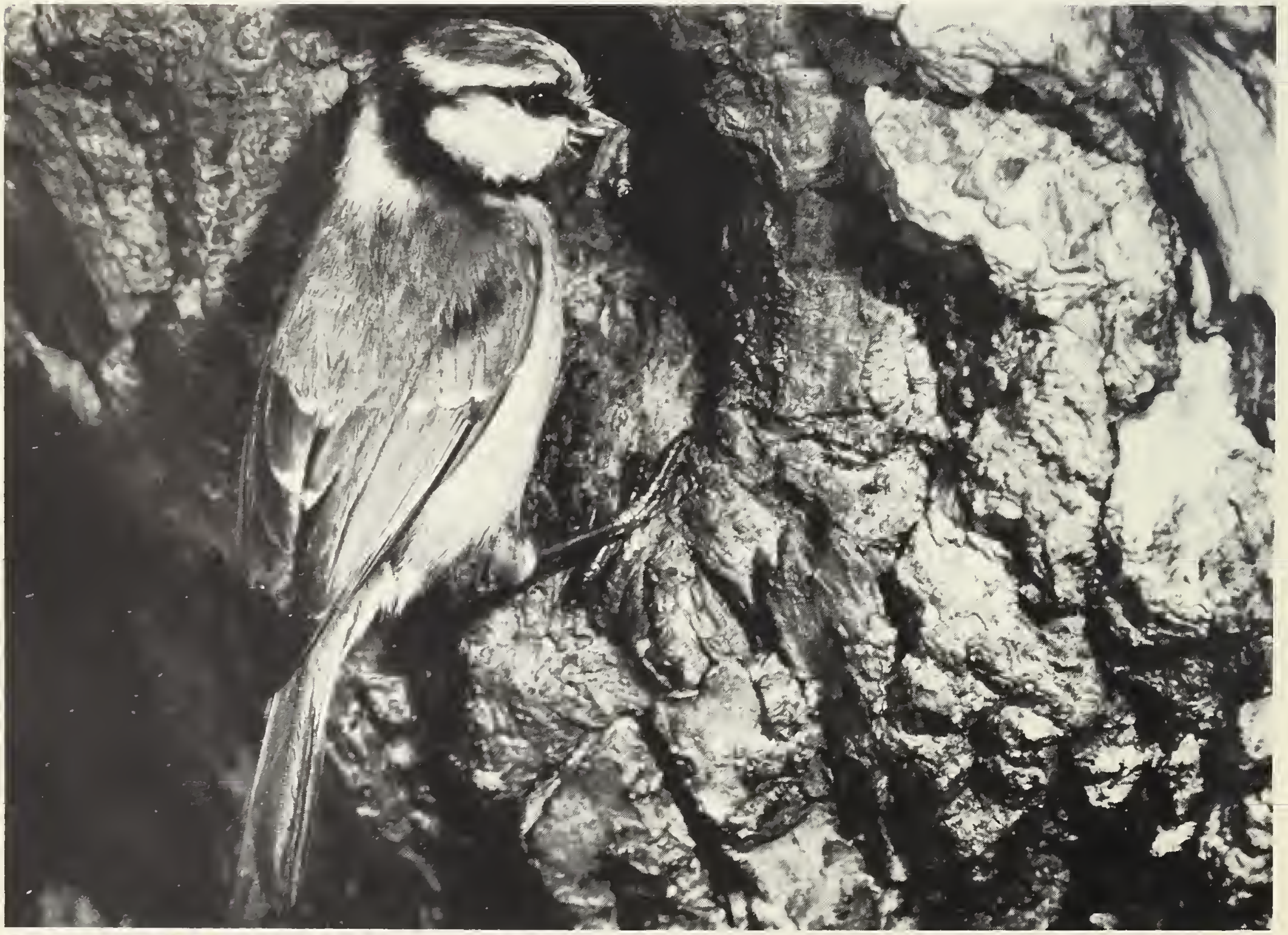

Mountain Avens

Yellow Mountain Saxifrage

Gunn Photographic Competition 1984



First equal. Emperor Moth, *by Ena Gillespie*.



First equal. Blue Tit at entrance to nest hole, *by Alex Cleland*.

wilderness, frightening in its solitude, but the breeding ground of waders, Greenshank, Golden Plover, Dunlin, Redshank, Oystercatcher and Sandpiper. The play of light and cloud formations are ever changing; mist and rain can be sweeping the moor on one side while the sun shines on the other. The climate is complex too.

We inevitably became familiar with the road from Durness to Tongue but one day were asked to stop in a layby near Portnancon by one of our party, a native of Sutherland, to look through binoculars at the slope on our right. There to our astonishment we saw 'H45' and 'Hood' in white stones. Anchored in Loch Eriboll early in the war, the crews of the warships and escort vessels became bored and had done this to help pass the time. Little did they know they were making their own memorial. We found it very moving.

Further along the road (the A838) near Heilam Ferry, one can see a double-draw lime kiln. Lime was used for "gooding the land" at the end of the last century. I expect peat was used for fuel, unless coal was brought in by sea.

Despite the marked absence of trees in the area, we found some birch scrub at low altitude on our way to Mount Hope. This isolated mountain rears up above the moorland to over 3000 ft and is very rich botanically; further east is Ben Loyal. Among the birch are a few scrubby oaks, some willow and Alder bushes and an odd Rowan. Ground cover is Bracken and other ferns, especially the lovely Mountain Fern (*Oreopteris limbosperma*), Lady-fern (*Athyrium filix-femina*), Common Male-fern (*Dryopteris filix-mas*), Scaly Male-fern (*D. pseudomas*), Hard Fern (*Blechnum spicant*), Buckler-fern species and under the shelter of the rocks, Beech Fern (*Phegopteris connectilis*). It is the Downy Birch here in Sutherland, with small leaves and grey-brown bark; some of it seems to grow from the rock itself. Willow Warbler, Wren, Blue Tit and Great Tit were amongst the bird life seen.

Ben Hope has neutral to alkaline soil and the minerals leach out enriching the wet flushes on its slopes. At the foot of the mountain among rushes and sedges we found Marsh Arrowgrass (*Triglochin palustris*) and many Common Spotted Orchids (*Dactylorhiza fuchsii*, a subspecies). We found three species of Sundew: *Drosera rotundifolia*, *D. intermedia* and the hybrid *D. x oborata* between *D. rotundifolia* and *D. anglica*.

There was a lot of Common Butterwort (*Pinguicula vulgaris*) and the Pale Butterwort (*Pinguicula lusitanica*) with its delicate pink flowers and red-veined leaves. Higher up were Starry Saxifrage (*Saxifraga stellaris*), Mossy Saxifrage (*S. hypnoides*) and Alpine Bearberry (*Arctostaphylos alpinus*). A stream had cut deep into the rocks and behind the waterfall was a curtain of mosses with ferns in the splash zone. Here, too, was evidence of relict woodland, with holly, juniper, birch and alder.

At Invernavar are unique terminal moraines of ground-up rock particles stretching in parallel lines as they were left by melting glaciers. The area is a National Nature Reserve and there we found arctic-alpine plants at sea level. On the limestone rocks there is Dryas heath vegetation, wind blasted and hugging the contours; a few creamy flowers remained. There were large areas of Dwarf Juniper (*Juniperus communis* ssp *nana*), Crowberry (*Empetrum* sp) and Cowberry (*Vaccinium vitis-idaea*), all bearing fruit. We found Purple Saxifrage (*Saxifraga oppositifolia*) looking very dehydrated and there was Wild Thyme (*Thymus drucei*), Alpine Lady's-Mantle (*Alchemilla alpina*), Mountain Everlasting (*Antennaria dioica*), Kidney Vetch, Bird's-foot-trefoil and Heather only ankle high, and finally and most importantly, *Primula scotica*. We counted about 200 plants; little beauties with their grey-green rosette of leaves and gem-like flowers. (A week earlier Purple Oxytropis (*Oxytropis halleri*) had been seen in the area at sea level.)

Butterflies seen on the Invernaver Reserve included the Common Blue, Ringlet, Small Heath, Tortoiseshell and Dark Green Fritillary. We thought we saw a Merlin but when the bird flew we observed its barred front. It opened its huge pink gape to call for food - a juvenile Cuckoo parasitising Meadow Pipit. We saw a Spotted Flycatcher family in alders near the river and some Twite around the car park.

On a lochan near Tarbet we had a delightful experience watching three Black-throated Divers. These strange beautiful Arctic birds swam slowly towards us, grunting quietly. On another occasion the loud wailing cries of Red-throated Divers, having a territorial dispute, echoed around the lochan.

We had an enjoyable holiday. I think that the orchids impressed us most, seeing them and Bog Asphodel in such numbers astonished us. The numbers of species of flowering plants on machair grassland, too, were a delight: we counted over fifty species within ten minutes in one small area near Oldshoremore and again at Scourie Bay. Quite a collection - we must return.

M. Robertson

Recommended reading:

Darling, F. Fraser and Boyd, J. Morton. Highlands and Islands. The Fontana New Naturalist.

Ratcliffe, Derek. Highland Flora. Published by HIDB.

The Sutherland Book. Edited by Donald Omand.

Raven, John and Walters, Max. Mountain Flowers. New Naturalist.

THE YEAR OF THE 'PUFF BALL'

1984 can go down as the Year of the true Mushrooms and, if not of all puff balls, certainly of the giant puff ball, variously known as *Lycoperdon bovista*, *Calvatia gigantea* and *Lasiosphaera gigantea* but correctly *Langermannia gigantea.* (Members will remember from my demonstration that the spores are not dispersed from a special apical pore, by erosion of the upper part of the fruiting body or by detachment of the whole puff ball from the soil, but by erosion of the entire outer skin of the puff ball to form a large powder-puff.) The giant puff ball popped up, although in reality hardly popping as it grows quite slowly, in old familiar haunts in the Forth Valley and some new ones, and sometimes very odd ones such as inside a greenhouse. The Cammo Park colony, familiar to several people, even hit the headlines this year with its portrait appearing in the Scotsman along with its 1984 owner. Collections from Cammo Park from earlier years are found in the Edinburgh (Royal Botanic Garden) Herbarium, but 10 lb and 42 in. in circumference is quite a healthy size[1]. Thus from the Borders to Shetland it has been recorded this year. On a past occasion the police delivered a large fruit body found with a pile of bones in a hedgerow in East Lothian. Two lorry drivers had discovered the macabre find with the partially eaten areas of the fruit-body resembling eye-sockets, nose and jaw-bone of a human skull!

Talking of East Lothian draws my attention to the earth stars, for East Lothian is the Scottish capital of this group, eight different species having been found there over the years, and once again some of them this last year. *Geastrum triplex* is probably the commonest of them growing in hedgerows, on tracksides, etc, even along roadsides in the outskirts of Edinburgh itself.

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[1] However, one photographed in the Irish Times was 32 lb, 15 in. high, 65 in. circumference.

Mutinus caninus, the Dog Stinkhorn, has again turned up in several areas within the Forth catchment area, e.g. foray to the Lomond Hills - 6th October, but alas the *Clathrus ruber*, or Lattice Stinkhorn, did not reappear at Broughty Ferry as it did in 1983.

Although not in Scotland, I was delighted this year to see the beautiful puff ball, *Lycoperdon mammaeforme*, with its patches of 'veil' as if dotted with flock. It was found in Yorkshire and Lancashire; a single unscrutinised record for Scotland occurs for Easterness (VC 96). But it's something worth looking for.

This year has also seen the production of a preliminary compilation of all the Gasteromycete (Stomach fungi) records for the British Isles from the data accumulated by the British Mycological Society. Midlothian has records for 28 different Gasteromycetes, East Lothian 27 and Fife 22. West Lothian only has 15 and one asks the question as to whether there really is such a difference, or whether the haunts in East Lothian are just that bit more attractive to the collector. Of all the areas in Scotland, Mid-Perthshire (VC 88) has the greatest number, 34 different taxa in all.

The commonest species in the Edinburgh area are *Bovista nigrescens*, *Phallus impudicus* and *Lycoperdon pyriforme*, and these appear also to be the most widespread in the British Isles; the first I very recently collected on the cliff tops on Herma Ness, Unst, its northernmost outpost in Britain!

The compilation shows how depleted of hypogeous puff balls Scotland is, with only eleven taxa recorded out of a possible thirty-four in the British list. Mid Perth is best endowed with 7 taxa, and Midlothian, a poor second with four, *Hydnangium carneum* being found with Eucalypts in a garden near Portobello but not this year, and *Hymenogaster albus* and *Rhizopogon luteolus* and *roseolus* all with pot-plants! You never know, keep a watch out when you repot your plants in the spring.

Thus, although the year was dry and the fungus season started late, it was still possible to find some treasures and receive enjoyment from these 'lower' plants. My thanks as always are extended to those who have sent puff balls to me during 1984.

Roy Watling
Royal Botanic Garden
Edinburgh

POLTON TO PENICUIK BY THE NORTH ESK

At the end of the last Ice Age, the torrential melt waters from the decaying ice sheets, lying between the Moorfoots and the Pentlands, cut a deep gorge in the Roslin Sandstone as they rushed to the sea. This gorge lying between Roslin and Polton makes a good day excursion and can be continued to Penicuik with fine exposures in the sandstones of the Upper Limestone Group. Rights of way beside the river exist for the whole length of the excursion and Eastern Scottish buses serve Polton, Roslin and Penicuik.

Starting from the north side of the river by Polton Bridge (NT 288 648) the path skirts the head scarp of the huge landslide of 1979 (see Baird and Smellie, 1980). The top part of the landslide is sand and gravel with several rock types which can be recognised as having originated in the Pentlands. The bottom one-third of the slope is boulder clay. Passing the landslide a detour can be made over the narrow neck of land into the loop of the Esk, known as the Maiden Castle.

This barely discernable earthwork is thought to be the remains of a bronze or iron age defended area. The route now takes the observer south through a fairly open valley but with over steepened sides. At Hawthornden Castle, once the home of the poet Drummond, the gorge proper begins and this gives superb historical and geological views from the path high on the west bank of the river. Should the water be low, and the explorer fit and intrepid, it is possible to wade up the gorge but this is not to be attempted by the faint hearted as once such a traverse has been commenced there is no way out except by continuing to the end of the gorge or returning to one's starting point. Those who opt for following the path will find that it gently descends until it is just above the river and beautiful exposures of the pinkish red Roslin Sandstone can be seen on the right. Two things strike the geologist immediately; first, that this sandstone was laid down in a high energy continually changing river environment - current bedding is apparent everywhere and on a large scale; secondly that this is a pebbly, gritty sandstone with bands of pebble indicating each surge of current.

As we move on towards Wallace's cave below Gorton House, the gorge becomes narrower and even more spectacular. High on the side of the gorge almost opposite Wallace's cave a small area of calcareous tufa lies uncomformably on the Roslin Sandstone. The explanation of this unique occurrence can only be attributed to a supersaturated stream of lime rich water, but source and age are very difficult to ascertain. At this locality we also see the first of several streams which plunge in cascades down the cliff face from the hanging valleys above. Moving on upstream we emerge from the gorge below the towering walls of Roslin Castle and cross a hidden fault that takes us from the Roslin Sandstone into the strata of the Upper Limestone Group.

The start of the second part of the excursion is through the gates of the Old Roslin Powder Mill, now a country park supervised by Midlothian District Council. The gates are at the sharp bend on the B7003 below Roslin village. A track leads through the Old Powder Mill passing on the right several embayments cut into the sandstone to provide secure and separate sites for the various buildings connected with the manufacture of gunpowder. It is interesting to note that in the sandstone walls of many of these manmade embayments considerable decalcification of the sandstone has taken place. This is possibly due to the water running down the steep faces having come from peat banks on the high ground beyond. Such peat banks did exist on many of the flat lying areas between Loanhead and Penicuik and they are mentioned in the historical literature, but it is difficult to imagine them still being so widespread and dense that run-off water in the early 19th century would be so acidic as to cause decalcification within a hundred and eighty years. In several places plant fossils, such as Calamite stems, can be seen in the basal portion of these sandstones which also often contain fragments of the underlying shale and bands of small pebbles.

The track crosses the North Esk on a wooden bridge at NT 266 621 and from the bridge can be seen a superb section on the east bank of the river. Upwards from the river level a sequence of sandstones and shales is repeated many times and then replaced by a fireclay some three metres in thickness. Above the fireclay massive sandstones have channelled and depressed the topmost beds and continue upwards for another ten metres to the viewpoint of the Hare Craig on the top of the cliff. Leaving the river just beyond the bridge the path goes up the steep slope of the south bank to join the track of the old Eskbank to Penicuik railway which now forms the basis for the rest of the walk to Penicuik. Due to (a) the almost horizontal bedding seen in most of the exposures, (b) the frequent slumping of rocks from the oversteepened banks, (c) hidden faults, and (d) the uniform nature of the sandstones and shales within the Upper Limestone Group, the few horizon indicators which are available have an undue importance. It is therefore worth the scramble down the ditch at NT 261 617 to find a small exposure of a fine grained grey dolomite which occurs 15 metres above a sharp bend in the river. Mineralogical evidence suggests that this is the Castlecary Limestone and consequently that the beds we have been examining downriver are high in the Upper Limestone Group. Returning to the track we continue our journey along a more open stretch of the Esk Valley with the river sweeping out to the right. Although not visible at the surface, a fault here brings a return to the rocks of the Roslin Sandstone. The fault, which has been revealed in bores, runs across the river just downstream from the Firth Viaduct (NT 258 616). We continue in the Roslin Sandstone all the way to Penicuik, although it will be noted that the lithology is quite distinctly different from that at the type locality downstream from Roslin Castle. It becomes very obvious that in the rocks around Auchendinny we are looking at either lateral changes in sedimentation, or at different horizons from those that are apparent downriver.

It is possible, if properly clad in wellington boots and old clothes, to leave the track of the railway at the Firth Viaduct and descend to the riverside. If the water is low the river bank can be followed around the two spurs opposite Firth House. About 100 metres downstream from the waterfall between Auchendinny House and Firth House, quite well defined current bedding can be seen on the massive bottom post of the two major sandstone ribs exposed high on the cliffs of the south bank. The waterfall itself is formed by a small stream which enters the Esk from the south bank. Only 25 metres upstream from the waterfall some 15 metres of the river margin are covered in a calcareous tufa deposited by water seeping from further up the bank. This tufa, although indistinguishable from that occurring naturally, has actually been deposited as a secondary mineral by water percolating through the caustic dump of the Dalmore paper mill. This is an interesting example of a geological feature resulting from man's activities.

Rejoining the track just downriver from the Dalmore mill we pass through the tunnel under the B7026 and cross to the west bank of the Esk by the old railway bridge which starts just beyond the tunnel. On the opposite side of the river just at this point, poorly exposed sandstones can be seen with almost horizontal bedding. A little further upstream, sandstones with an apparent dip of 15°W gradually become horizontal as one progresses upstream. Beyond this point, in a rapidly eroding bank 6 metres high, a sequence of sandstones and shales can be seen which has almost certainly slumped from further up the bank.

Opposite Glencorse Barracks sewage works an old quarry exposes pale creamy buff sandstones stained with iron in places. Posts of up to 45 cm are separated by thin shaley bands with a total exposure of about 6 metres. The bedding in the quarry is almost horizontal.

From the old quarry until Penicuik, some 1 km distant, the valley opens out and takes on a more mature aspect. This is a deceptive appearance, however, as the final slopes up to the level of the surrounding farmland are still steep and liable to landslide under certain adverse conditions.

The excursion is most conveniently terminated just beyond the Penicuik sewage works by taking the road which rises steeply up into Penicuik from the bridge at NT 245 605. Those who wish to contemplate further the stratigraphic problems which are raised by this excursion can take the walkway upstream on the east bank of the river to a point approximately 60 metres upstream from the wooden walkway bridge at NT 244 602. Exposed at this point on the east bank, just at water level, is the limestone identified on the geological map as the Calmy Limestone. Because of the limited exposure of the beds above and below the limestone it has limited value as a horizon indicator but it does at least help to fix parameters to the strata through which we have been passing.

Bill Baird

For references and further reading, see over.

References and Further Reading

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Baird (1982). Visit to Polton Glen - 23rd June 1982. The Edinburgh Natural History Society Journal, p. 43.

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Tulloch and Walton (1958). The geology of the Midlothian coalfield. In, Memoirs of the Geological Survey of Scotland, Chapters V, VI, pp. 72-92.

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ROOTS

In the 1983 issue of the Journal (page 27) the question was asked by J. Carlyle as to why Whitlow Grass, Goosegrass and Scurvy-grass are so named when they are not grasses. And neither are Grass of Parnassus, Knotgrass or Blue-eyed-grass.

The explanation may be found in the history of the word 'grass'. The Old English (Anglo-Saxon) word was græs. It was pronounced more or less the way we pronounce it in Scotland today. It meant plants in general. So Whitlow Grass meant simply Whitlow plant.

The word grass has similar forms in most Germanic languages and dialects. They stem from an Old Teutonic root (appropriately enough!) which is 'gra' or 'gro', which gives us the Middle High German 'gruose' meaning 'young plants'. The words 'grow' and 'green' are both ultimately derived from the same word, which also gives the Latin 'gramen' - grass.

There are many more grass names for plants in our British dialects. The following words have all been recorded combined with the word grass: Adder's, Black, Broad, Carpenter's, Cheesecake, Cock, Convict, Cow, Crab, Darn, Deer's, Earning, Everlasting, Fiddle, Fire, Five Finger, Five-leaved, Golden Eyed, Grass Polly, Four-leaved, Frog, Fullers, Good Friday, Gull, Gulsa Girse (= jaundice grass), Heart Fever, Hog, Hundred Leaved, King's Finger, Lily, Marl, Natural, Penny, Pig, Poverty, Pudding, Rattle, Rib, Scratch, Setter, Silver, Snake's, Sour, Sow, Sparrow, Spotted, Star, Steep, Sweet, Sword, Tether, Thickening, Three-leaved, Thousand-leaved, Tinker-Tailor, Tongue, Twin, Viper's, Wall, Wart, Willow, Wire, Yarra, Yellow, Yellowin Girse and Yirnin.

The forms 'gulsa girse' and 'yellowin girse', both from Shetland, preserve an alternative form of the Old English word 'gærs', where the letter 'r' and the vowel have changed places. Curiously enough, the same thing happened with the word 'root', which forms part of plant names as in roseroot and arrowroot. So we have numerous plant names with the element 'wort': Navelwort, Pearlwort, Ragwort and St John's-wort.

H. Thom

MORE WILD FLOWER NAMES

Hawthorn	'Haw' is a corruption of Anglo-Saxon 'haga' (a hedge) so the word means 'hedge thorn'.
Hazel	Derived from Anglo-Saxon 'hæsel', a baton of authority - cut rods from hazel were used to drive slaves and cattle.
Helleborus (her-le-borus)	Greek 'elein' (to take away), 'bora' (food), the roots producing vomiting.
Hierochloe (hi-er-o-kloe)	Holy Grass - Greek 'Hieros' (sacred), 'chloe' (grass). In olden times this was the grass used for strewing in churches.
Horehound	'Hore'. Anglo-Saxon 'har' (grey) from the grey-like woolly down on the stems. Hound has nothing to do with dog - it is a corruption of Anglo-Saxon 'hune' - a strong smell which the plant has.
Shallago Leaf	An old Queensferry worthie used to smoke in his clay pipe a 'tobacco' called 'shallago leaf' to relieve his 'sair host'. I later found out that the leaf was Coltsfoot - so shallago is not so far from Tussilago (Latin for Coltsfoot is *Tussilago farfara*)

Tussis is the Latin for a cough which reminds us that these leaves were a specific against coughs and colds. Remedies from them were prepared in various ways. Sometimes they were burned on coals and their fumes inhaled, also decoctions or distillations were prepared from them. Mixed with elder flowers and nightshade these proved a good remedy for hot agues and shortness of breath.

Coltsfoot lozenges for coughs which were well-loved in Grandmother's day are still in use today. Go into a chemist for something for a bad cough ('sair host') and you will probably be offered a tin of 'Tussels'.

J. Carlyle

References

Old Ferry Worthie

Wild Flowers. Cocke-Nuttall

NOTES ON NATURAL HISTORY

Some 1983 observations

11.12.83 Thirty-seven Wild Goats including 4 young kids on the south side of Slochd Summit, north of Carrbridge. *(C.S.)*

11.12.13 Forty-two Whooper Swans behind British Aluminium plant at Invergordon. *(C.S.)*

Observations in 1984

7. 1.84 The first Greenfinch, female, feeding on nuts put out for birds in the garden. (Small birds, especially finches, remained in woodland and on farmland during the mild autumn and early winter of 1983-84.) *(M.R.)*

12. 1.84 A cold stormy day with northerly wind. Many small birds were now feeding at the bird table, including two Coal Tits and four Greenfinches. A Thrush joined Blackbirds feeding on the lawn. *(M.R.)*

13. 1.84 After a severe storm with sleet and snow overnight, there was a blizzard at 4.00 pm. The birds seem to know of it and were feeding voraciously at 2.30 pm. *(M.R.)*

15. 1.84 Frozen snow had covered the ground for three days - large flocks of geese seen flying south, obviously looking for feeding grounds, calling loudly and flying in a confused fashion. *(M.R.)*

17. 1.84 A thaw - snow, slushy and melting. Dunnocks appeared to be paired. My 'resident' Robin had accepted a mate with 'ticking' and bobbing. First Siskins (2 male and 1 female) seen feeding on nuts. They often feed upside down. *(M.R.)*

10. 2.84- 17. 3.84 A party of about 50 Bramblings in or around a garden (Nile Grove) - mainly on large lime tree. *(A.E.)*

1. 3.84 West side of Aberlady Bay one Black-tailed Godwit. *(C.R.)*

4. 3.84 Siskin and Greenfinch appear to be pairing. *(M.R.)*

17. 3.84 Kingfisher at Almondell - on an S.W.T. outing. *(N.F.)*

22. 3.84 Long-tailed Tit (*Aegithalos caudatus*) - in Scots, a fuffit - in a garden at Kingsburgh Road, Murrayfield. *(H.T.)*

24. 3.84 West side of Aberlady Bay a Black-tailed Godwit coming into breeding plumage - the chestnut on the head and neck most noticeable. Seen on E.N.H.S. outing. *(C.R.)*

25. 3.84 Four specimens of *Adroniscus dentiger* under garden rubbish in Kingsburgh Road. This is a pink slater (woodlouse) about 6 mm long. It occurs in the wild in the southern part of Britain, but in the north mainly in gardens. *(H.T.)*

29. 3.84 Last sighting of 6 Siskins after much excited calling during the past fortnight: male birds in full breeding plumage. *(M.R.)*

1. 4.84 A Small Tortoiseshell butterfly was sunning itself on the lawn - temperature 45°F (7°C). *(M.R.)*

8. 4.84 Wheatear seen north of Dalnacardoch, by Edendon Water. *(E.F., C.S.)*

12. 4.84 Pentland Hills, path to Cauldstane Slap, pupal case of Emperor Moth (*Saturnia pavonia*), on heather. *(C.R.)*

18. 4.84 A Willow Warbler heard at Gore Glen, Arniston; a Swallow seen. *(M.R.)*

19. 4.84 Moschatel (*Adoxa moschatellina*) and Toothwort (*Lathraea squamaria*) found in Gore Glen, Arniston. *(C.R.)*

22. 4.84 Easter weekend - very warm with temperatures of 63°F (17°C). Swallows, Common Tern and Willow Warblers seen at Longniddry. *(M.R.)*

24. 4.84 A Cuckoo was heard at St. Mary's Loch. *(M.R.)*

25. 4.84 Seen on disused railway line, near Avonbridge, W. Lothian: one fox (*Vulpes vulpes*), Bee-fly (*Bombylius major*), Common Ground Hopper (*Tetrix undulata*), Branch Gall (*Euura amerinae*) on Salix. *(C.R.)*

27. 4.84 Willow Warbler and Wood Warbler heard at Killiecrankie. *(E.F.)*

29. 4.84 Three Osprey circling low overhead, Boat of Garten. *(E.F.)*

30. 4.84 Water of Leith, Powderhall, one Tree Pipit. *(C.R.)*

2. 5.84 Inverleith Park Pond - one Cormorant. *(C.R.)*

3. 5.84 Pentland Hills, Bore Stone, newly emerged male Emperor Moths (*Saturnia pavonia*) over the heather. *(C.R.)*

5. 5.84 Beil House, E. Lothian, one male Orange-tip butterfly (*Anthocharis cardamines*) - E.N.H.S. outing.

9. 5.84 Royal Botanic Garden, one pair of Sparrowhawk suspected of breeding (see E.N.H.S. Journal 1983, p. 29, re bird seen in Inverleith Park). *(C.R.)*

12. 5.84 A pair of Goosanders seen on the River Tweed (NT 123 297) and a Peregrine about one mile up Stanhope Glen towards Dollar Law. *(J.S.)*

13. 5.84 Roman Road (Dere Street) east of Jedburgh (NT 695 213) - male Orange-tip butterfly. *(C.R.)*

17. 5.84 Calderwood Ponds, W. Lothian, Palmate Newts (*Triturus helveticus*) were caught and released after being photographed. *(C.R.)*

26. 5.84 Near Achnashellach (NH 023 531) the Green Hairstreak butterfly (*Callophrys rubi*). *(W.G.)*

30. 5.84 On the evening outing at least 6 pairs of Fulmars were seen nesting in the disused part of Torphin quarry. A Tawny Owl was seen in woods on opposite side from road at Clubbiedean Reservoir. *(B.C.)*

7. 6.84 Gore Glen, Arniston, one Fox (*V. vulpes*); male Orange-tip butterfly. *(C.R.)*

15. 6.84-
22. 6.84 On Isle of Colonsay, Choughs seen on several occasions. Herds of Wild Goats on high ground near Balnahard. Lungwort - a lichen (*Lobaria pulmonaria*) - on the trunks of trees at Colonsay House. *(8 E.N.H.S. members)*

17. 6.84 Two Wood Tiger moths were emerging on Dumbarton Moor (NS 477 792) and one was flying on 8.7.84 on the slopes of White Hope Shank (NT 183 458), near Romanno Bridge. *(W.G.)*

23. 6.84
30. 6.84 Isle of Islay - Red, Roe and Fallow Deer seen frequently. Otters seen on two occasions off eastern coast. Feral goats in large numbers at the Mull of Oa. *(8 E.N.H.S. members)*

24. 6.84 Pair of Ospreys spotted over Lochan Oisnneach Beag, Perthshire. One was carrying a sizeable fish. A Golden Eagle flying fairly low invaded the territory. An Osprey made dive bombing attacks, but the great bird ignored the osprey and sailed on. (Lochan Oisinneach Beag and its larger neighbour, Lochan Oisinneach Mor, lie in the hills between Dunkeld and Kirkmichael). *(G.M.)*

24. 6.84 As a result of the strong northerly winds which had been blowing the previous fortnight, the Tern breeding programme was in ruins. Parent birds had been forced to desert sand blown nests, eggs and chicks. Predatory gulls and crows had cleared up anything left. Aberlady and Tyninghame sites were both affected. *(M.R.)*

3. 7.84 At Morton Lochs, butterflies included Ringlet, Meadow Brown, Common Blue and Dark Green Fritillary. *(M.M.)*

6. 7.84 At Barns Ness, E. Lothian, very large numbers of Six-spot Burnet moths, on Creeping Thistle and Thyme. *(M.M.)*

7. 7.84 Adult Mink watched at close quarters emerging from a drainpipe on River North Esk, near Auchendinny - E.N.H.S. outing.

10. 7.84 Bird's-nest Orchid (*Neottia nidus-avis*) under beech; also bank of Wood Vetch (*Vicia sylvatica*), at Killiecrankie. *(E.F., H.M., C.S.)*

11. 7.84 Starry Saxifrage (*Saxifraga stellaris*), Yellow Mountain Saxifrage (*S. aizoides*) and Oak Fern (*Gymnocarpium dryopteris*) seen when walking through Gaick Pass. *(E.F., C.S.)*

12. 7.84 Two miles west of Lockerbie there was a host of Ringlet butterflies (*Aphantopus hyperantus*). *(W.G.)*

13. 7.84 Broad Helleborine (*Epipactis helleborine*) growing in a suburban garden in the Barnton area. *(M.R.)*

18. 7.84 Two Six-spot Burnet moths seen for the second year running on Salisbury Crags. *(W.G.)*

24. 7.84 Attractive patches of Tansy (*Tanacetum vulgare*) in flower outside southern boundary of Lothian Park playing fields. *(M.S., H.K.)*

29. 7.84 At Mire Loch, St. Abbs, Brown Argus butterfly, Scottish 'White spot' (*artaxerxes*) variety. At the same location about a dozen Grayling butterflies were feeding on Bramble. Nearby, at Fast Castle, two of the latter were emerging from the pupae. *(W.G.)*

1. 8.84 Three Hen Harriers seen together in Glen Derby, Perthshire. The birds rose from and returned to a small outcrop of rock in the heather. (Glen Derby is a small glen south of Kirkmichael, Perthshire, near the fairly large Loch Broom.) *(G.M.)*

3. 8.84 Large stand of Crown Vetch (*Coronilla varia*) spreading on bank at Pencaitland Railway. *(M.M.)*

5. 8.84 Grayling butterflies at St. Abb's Head. *(M.M.)*

5. 8.84 Wild Parsnip (*Pastinaca sativa*) in flower at roadside, West Harbour Road, Granton. *(H.K.)*

5. 8.84 Numerous Scotch Argus butterflies were flying up from Glen Lochy (between Tyndrum and Dalmally - NN 260 290 and 260 270). *(W.G.)*

15. 8.84 *Fluteus lutescens* in burn by Alder Wood, Crichton Glen. *(E.F.)*

20. 8.84 Many patches of Tansy in flower along the side of the River Esk at Musselburgh. *(J.R.)*

26. 8.84 Dead male Scotch Argus butterfly found at Mill Dam, near Dunkeld. Nearby (NO 031 460), a late Dark Green Fritillary appeared. *(W.G.)*

29. 8.84 Caterpillar of Grey Dagger moth feeding on Japanese quince in a Bruntsfield garden. *(E.F.)*

29. 8.84 A Lesser Swallow Prominent moth caterpillar was crossing the road at Ormiston, East Calder. *(W.G.)*

30. 8.84 *Geastrum triplex* in strip of wood, Greenbank Drive. *(E.F.)*

16. 9.84 *Leccinum onychium* found beside Loch Gamhna, Speyside, and identified by Dr Roy Watling. *(E.F.)*

18. 9.84 A very stormy day. Three swallows seen hawking insects in the lee-side of the shelter belt of trees between the car park and the conifer plantation at Tyninghame. *(M.R.)*

21.9.84 A bright sunny morning with a cold NW wind blowing. The first flock of geese (about 60 birds) seen flying SE over Edinburgh at 9.40 am. *(M.R.)*

14.10.84 On B.S.E. outing to Mill Glen, Tillicoutry, *Hygrocybe spadicea* found in grassland (identification confirmed by Dr Roy Watling). *(E.F.)*

17.10.84 A Kingfisher flying upstream on the Tweed near Neidpath Catle, Peebles. *(M.R.)*

General observations 1984

- A population explosion of seven-spot ladybirds this year.
- This autumn hedgerows groaning with fruit: hips and haws, rowans and elderberries. It is a bumper season.
- Amazing crop of acorns. Last year there were hardly any to be found; this year every oak tree has an abundance.

(M.R.)

Extracts from M. Mowat's bird records - 1984

3.1.84	Kingfisher on Braid Burn near Liberton (attacked by Magpie) - already reported in Scottish Birds.
4.1.84	16 Whooper and 4 Bewick Swans near East Fortune (still there on 21.1.84).
6.1.84	Flock of about 20 Siskin near Hailes, East Lothian (some there again later on 21.3.84).
28.1.84	Very large flock of Skylarks at Kilspindie.
4.2.84	4/5 Gannets at Yellowcraigs.
11.2.84	Fulmars on nest sites at Eyebroughty.
19.2.84	Large flock of Chaffinch/Bramblings on Broughton/Biggar Road.
23.2.84	Glaucous Gull at Ferny Ness, E. Lothian.
25.2.84	Very large numbers of Yellowhammers near Pencaitland Railway (at Grain Store!).
28.2.84	Greenshank at Tyninghame. Also several Treecreepers.
1.3.84	2 Ruff at Port Seton, with large flock of Knot.
10.3.84	Gadwall at Lochore, Fife. Sandwich Tern at Elie.
18.3.84	At least 40 Goosander at Portmore.
29.3.84	Buzzard at Cademuir, Peeblesshire.
31.3.84	On track between Dunkeld and Kirkmichael: 1 Osprey, 2 Buzzards, 2 Canada Geese (overhead); flocks of Siskin, Redpoll, Crossbill; Great Spotted Woodpecker, *inter alia*.
1.4.84	Large flock of Fieldfares near Stirling.
14.4.84	Swallow on Tyne at Hailes.
3.4.84 & 15.4.84	Up to 40 Golden Plover in field in Lammermuirs.
16.4.84	Chiffchaffs at Hirsel.
20.4.84	Large flock (200 or so) Pink-footed Geese near Shiplaw.
22.4.84	Willow Warbler at Medwyn.
14.5.84	Lesser Whitethroat at Aberlady, and 1 late Fieldfare.
15.5.84	First Swifts in Edinburgh.
16.5.84	Grey Wagtails feeding young at Hermitage of Braid.
20.5.84	Shoveler at Aberfeldy.
22.5.84	Grey Heron nesting on Island at Beecraigs, W. Lothian.

23.7.84	Over 100 Golden Plover at Musselburgh.
2.8.84 19.8.84 25.8.84	At Barns Ness, 2, 8 and 14 Whimbrel, respectively.
8.8.84	2 Greenshank at Gladhouse.
22.8.84	Greenshank at Whitadder Reservoir.
4.9.84	1 Gadwall, 1 Ruff and 4 Canada Geese at Musselburgh.
20.9.84	Kingfisher at Cramond (sighted by M. Bell). Arctic Skua and 14/15 young Gannets at South Queensferry.

(M.M.)

Edinburgh Y.O.C. Water of Leith Survey 1983

In 1978 Edinburgh Young Ornithologists' Club conducted a survey of the waterbirds on the Water of Leith. Coordinated counts took place early on Sunday mornings at the beginning of May and October along the length of the river from Leith Docks to Balerno. From the information gathered it was possible to establish population figures for several species and to show their distribution along the river. A report of this survey was published in the E.N.H.S. Journal for 1979.

It was the intension then to repeat the survey five years later and in 1983 this was carried out. The new information acquired allowed a comparison to be made with the earlier figures and this provides an indication of how our local waterbirds are faring. A further comparison with national trends is possible by taking into account the indices provided by the B.T.O. Waterways Bird Survey. A full account of the survey has been published in the Lothian Bird Report 1983. The following is a summary!

The Dipper population appears to have remained at 10-12 pairs. 1983 was more productive of young and autumn dispersal resulted in stretches of less likely river, blank in 1978, being occupied at the October count. Grey Wagtail remain also the same at 7-8 pairs. An interesting change here was that these pairs were concentrated on the upper stretches of the river with only two pairs recorded below Slateford. In the autumn the birds were distributed right down the river however. With both these species a drop has occurred nationally, so the local position is very satisfactory.

In 1978 the distribution for breeding Moorhen was found to be the exact inverse for Dipper and Grey Wagtail. There was a close correlation with river gradient, minimal gradient for Moorhen, steeper gradient for Dipper and Grey Wagtail. While a total of 4 Moorhen were back in the favoured stretches in October 1983, in the May count not a single bird was seen. This indicates a dramatic drop at a time when the national decline was just 17%. The scope of the survey cannot provide clear evidence of the reasons. The generally held view is that Mink could be responsible but there may well be other factors which have not been identified. Views on this would be welcomed as would be any records of Moorhen by anyone who has been able to observe the river regularly in recent years.

The position with Mallard appears to be reasonably stable but it is clear that the river does not have a discrete population. Individuals are constantly flying between the river and nearby ponds, and the survey methods cannot cover this adequately. Heron provided increased sightings but with no sign of breeding; the river is used only as a feeding area.

As in 1978 no Kingfishers were recorded in May so it is presumed that they do not breed currently along the river. However, it is well known that out of the breeding season individuals dispersing from other areas have turned up and have given delight to lucky birdwatchers. In the October count 1983, one was seen at Leith Docks and another was traced flying all the way from Colinton Dell to Stockbridge. It took forty minutes to make the journey. One lucky pair of observers had the chance finally to watch it fishing for twenty minutes in the river beside Saunders Street.

M. Porteous
Leader of Y.O.C.

Forth Island Bird Counts 1984

	Craigleith	Lamb	Fidra	Eye-broughty	Inchkeith	Inch-mickery
Fulmar	77	3	130	43 nests	563	3
Cormorant	35	129				nil
Shag	379	284	64		4	22
Gt Bl Back	4					
L Bl Back	140	c2	c60		X	89)
Herring Gull	c 1500	c125	c350	X	X	)
Kittiwake	610	101	506		257	
Common Tern			*30+)* *30*			216+
Arctic Tern			*1+)*			
Roseate Tern						4+
Sandwich Tern						407+
Razorbill	42	21	44		30+	
Guillemot	1350 bds	c3000 bds	159 bds		31 bds	
Puffin	700 bds	20 bds	325 bds		775 bds	

All figures are sites or pairs except where indicated as single birds. X means present but not counted. I am grateful to the R.S.P.B. for providing the Inchmickery counts.

The weather behaved itself this year and we visited all the islands on the planned dates. As last year, there was a slight overall increase in many species, perhaps helped by a long calm spell of weather in May. Fulmar were generally up except on Craigleith where calm seas had made access easy for people collecting gulls' (and some Fulmar) eggs for the pot. This year no Cormorants bred on the Cow and Calves off Inchmickery. It would be interesting to know if they have shifted to another Inner Forth site such as the Haystack or Carr Craig. Around 20 Puffins were on the Lamb and there were several burrows - the first time we have seen these on this island. Guillemots continue to increase on Lamb. There must have been some 3000 birds on the rocks when we arrived, with roughly a quarter of these leaving and flying round and round the rock. Accurate counting is impossible but there may be up to (or more than) 2000 pairs breeding this year. A slight but steady increase continues on Fidra and Inchkeith.

Again the terns present a less rosy picture. On Fidra we found 29 nests with eggs and some scrapes. From a distance and before we had caused any disturbance, it was obvious that the terns were in a disturbed state. Several Herring Gulls were on eggs fairly close to the colony and were being dive-bombed by the terns. Quite a number of tern eggs had been pecked - apparently by the terns themselves. Three days later there were only 12 nests with eggs (J.F. Hunt, R.S.P.B.). Obviously there are too many big gulls on the island for a ternery to be maintained. Due to a late arrival the tern count at Inchmickery was a poor one (J.F.H.), but 4 Roseate nests is an exceedingly disappointing total.

The only unusual bird seen was a Blue Snow Goose on both Lamb and Craigleith. In 1967 we ringed a Puffin chick in a burrow on Craigleith. This bird was taken from a burrow on 18th June 1983 by the Edinburgh Ringing Group and re-ringed. It was 16 years old and apparently still going strong.

R.W.J. Smith

The Weasel Dance

Through the kitchen window of my cottage at Cockburnspath, on a sunny July afternoon, I saw a weasel bound across the lawn, and for the next five or six minutes my husband and I were entertained by what I can only describe as a weasel dance. There were several birds about, incuding a young blackbird on the grass, and the weasel cavorted in front of this bird, rolling over on its back with a fine display of white underparts against the ginger of the rest of its body, leaping in the air, darting into flower beds and reappearing for a swift rush, at which the blackbird merely fluttered a few feet in the air and came down again. Was it "mesmerised" as one reads of rabbits being thus immobilised by stoats before a kill? But we had the clear impression that this "attack" was playful rather than murderous, and certainly the bird eventually flew away unscathed. The weasel jumped up to play with sprays of catmint, wove in and out of shrub and flowerbeds and completed the somersaulting movement. The gyrations strongly reminded me of watching an otter playing with seaweed off the coast of Skye.

I again saw the weasel in the garden some ten days later but this time he failed to repeat the dance.

M. Watson

Two Sightings of Little Auk

29.1.84 At 11 am on St. Ford Links (Forest), near Earlsferry.

While walking on the public road through the wood, a Little Auk "crash landed" on one of the fir trees and dropped to the grass verge. I walked to within 3 feet of the bird. It was uninjured and did not seem concerned by my presence.

After a short rest it took to the air, gained height and was last seen well on its way to the coast about a mile away.

G. McDougall

20.11.84 Dirleton.

On 20 November I walked from Dirleton down to the seashore through a pine wood and came out on to the sand dunes facing Fidra Island. There in front of me in the sea were very large numbers of Little Auks, several rafts of them, all facing the same way, going towards Eyebroughty (between Dirleton and North

Berwick). The sea was alive with birds - Long-tailed Ducks, Common Scoters, Cormorants, Shelduck and others - and they all seemed to be in a state of great agitation, flying up and settling back again. I understand the Little Auks are only to be seen round our coasts during onshore gales and they were probably exhausted and hungry. I hope they found food and shelter in the lee of our offshore islands and managed to survive.

M. Wood

Whooper Swans in East Lothian

I have been out a good many times this Spring (1984) looking for the Whooper Swans. They were in the Congleton area before Christmas but disappeared when the very bad weather set in. They were seen again in the Drem area in mid March. I saw 17 Swans on 17th March at Congleton between Congleton Cottages and Congleton Mains, and on 1st April I saw 19 at Drem, near Muirton Farm, and again on 3rd April. This is where I have seen them quite often in past years. Last year there were 35 Swans there and in some years there have been a few Bewick Swans with them. It is rather a nice thing to do to go looking for them. One gets to know the East Lothian scene and it is interesting to see the fields in all stages of cultivation, and if one cannot find the Swans there are always the Geese.

M. Wood

Butterflies in Edinburgh - 1984

On 17th March, a cheerless, unspringlike day, a Small Tortoiseshell surprised me near St. Giles. Did it want to celebrate the 'Grand Slam' Victory at Murrayfield that afternoon or was it foretelling the hot spring and summer to come?

Strangely, I noted fewer butterflies this summer than in 1983 or 1982. Had the wilting, drought-struck flowerheads anything to do with this? Generalisations are too easy without plentiful and detailed observations of common species (numbers, weather conditions, what flowers visited, etc) that Paul Whalley in his recent book "Butterfly Watching" calls for.

The Orange-tip duly appeared at their recent Lothian sites but it was the Small Copper that seems to have thrived best in the heat. I have not seen so many in the City (Arthur's Seat, Corstorphine, etc) in almost 30 years of observing. From 4th July until 21st August I saw at least one on every one of my frequent checks on Arthur's Seat and on the 10th and 21st August 8 were flying in one small area.

W.B. Grubb

Alkanet (*Pentaglottis sempervirens*)

One of the less common wild flowers found in and around Edinburgh is *Pentaglottis sempervirens*, or Green Alkanet. It is a member of Boraginaceae, the Forget-me-not family.

P. sempervirens is a perennial which grows to about 2½ feet. It is a roughly hairy plant. The leaves are pointed oval in shape, the lower ones being stalked and up to a foot long. The flowers, like some other members of this family, appear pink in bud, but open to blue, in this case a brilliant blue, with a white eye. The flowers grow in long-stalked clusters, with a pair of small leaves just below them. They begin to flower about April. At the time of writing this during the first week of December 1983, there are several specimens still in flower and in bud.

Alkanet is usually found in woods and hedgerows, and apparently also by castle ruins and Medieval abbeys.

The scientific name, 'penta' (five) and 'glottis' (tongue), refers to the five tiny white scales which cover the mouth of the calyx tube. Sempervirens means evergreen. The name Alkanet is derived, through Spanish, from the Arabic Al-henna, the henna plant. The use of the roots of the henna plant as a source of red dye dates back to Ancient Egyptian times. Alkanet roots produce a similar red dye, and it was introduced into Great Britain in the Middle Ages by monks who cultivated it, the plant being French or Spanish in origin. An early record of Alkanet dyestuff being sold dates from 1326 - "Alkanet ¾ lb - 1/8".

In Edinburgh, Alkanet grows at Comely Bank, on waste ground known locally as "The Mixie". There is also a patch growing by a disused quarry near Dalmeny. Other sites are mentioned in the old Lothians Flora.

The Dalmeny patch is interesting because the plants there have pale spots on the leaves, reminiscent of Alkanet's relative, Lungwort (*Pulmonaria officinalis*). In the centre of each pale whitish spot is a mid-green spot, in the centre of which is a stout bristle, about twice the length of the hairs on the rest of the leaf, and sturdy enough to prick the finger. The spots appear most conspicuous in the spring.

Although some of the specimens in the herbarium at the Royal Botanic Garden also have spotted leaves, we have not yet found a flora which mentions this feature. It would be interesting to discover the distribution of the spotted and unspotted plants.

H. Thom

Some Observations from West Lothian - 1984

Not far from me (Threemiletown) is a disused shale quarry which is carpeted by flowers and grass. In one small part where Bird's-foot-trefoil and Eyebright grow there usually are a few Common Blue butterflies, but this year I have never seen so many. At one time about thirty butterflies would be fluttering over the flowers forming a moving cloud of blue.

For a few years now, Brown Hares have used the field at the back of my home to box in! - not in March but usually in June and July. This year there were five of them and it was difficult to keep track of who was boxing whom as they disappeared into, and reappeared from, the tall wheat. A pair would perform almost a ritual dance, running in opposite directions, suddenly stopping, running off again and stopping, and then running back to meet, just missing a headlong collision at the last second by standing on hindlegs and boxing. I've seen three hares doing this, not just a pair.

In the middle of August, I was walking home on a sunny evening and not far from Philpstoun, passed a newly cut field of wheat. Playing in the stubble were 12 to 15 young hares, not babies but "teenagers". They did not see me and I spent a delightful hour watching them. Some of them seemed to be having a game of "chase", the rest were feeding, but suddenly this game spread to the other hares and they all started to run about and then would meet in an explosion of boxing matches! They did not just box in pairs but maybe four or six would spar then split up, run about at breakneck speed and then meet up to spar again. I suppose this must be preparation for adulthood, but they certainly were having a carefree time on that beautiful golden summer night.

I have had a few glimpses of Roe Deer in the wood near Winchburgh, usually does but once a buck who saw me and gave a short bark before disappearing into the trees.

Along the canal I came across six Twayblade orchids in a place I cannot remember having seen them before. When I went back about a fortnight later, they had disappeared and I thought they had been dug up, but couldn't see signs of ground disturbance. Would they have been eaten? I shall look out for signs of growth next year.

Lastly, in the second week in September I was opening my nut container for feeding birds which had been undisturbed since last spring, and found a most beautiful lemon-brown spider, sitting in her web with dozens of pinhead size babies scurrying round about her. They were all emerging from the cocoon and when I took off the container lid and they felt the breeze, off they went on their threads of silk over the garden. Some stayed behind in the lid which I carefully replaced - the mother is still there, but few babies now - I don't know if they have gone off or if she has eaten them!

R. Calder

Some Notes from C.R.

In the 1983 E.N.H.S. Journal, page 28, I reported the finding of a Common Squid (*Loligo forbesi*) at the mouth of the Midhope Burn, West Lothian. Fortunately I had photographed it and I was able to submit the slide to Dr S. Smith for her identification. I was wrong, even though I had used "Collins Pocket Guide to the Seashore" by Barrett and Yonge. The specimen was *Todarordes sagittatus*, "the one usually wrecked", whereas *Loligo* is "rather unusual as far up the Forth".

In the 1983 E.N.H.S. Journal, page 30, I described what I consider to be a Camperdown Elm, and said it resembled the named one in the Royal Botanic Garden. When I went to seek this tree this spring it had gone. On the 1st March 1984, Mrs. Mary Robertson and I found two specimens in Aberlady village. They stand on either side of the gateway leading into Aberlady Parish Church. There are two more to be seen close to the rough road that leads to the old well at Scotlandwell.

If one walks along the Rocheid Path as far as the grounds to the rear of the Christian Scientist Church in Inverleith Terrace, one could find an interesting tree. I studied this on 23rd July 1984 through binoculars and concluded that it was a Hop-hornbeam (*Ostrya carpinifolia*), new to me and one for which I would gladly have a second opinion.

C. Rawcliffe

EXCURSIONS 1984

Key for excursion:

B - botany
O - ornithology
G - general
E - entomology
F - fungi
S - spiders
T - trees
Ge - geology
NL - mosses and liverworts
Con - conservation
Dr - dragonflies
Mam - mammals
SEE - Site evaluation exercise

Day Excursions and Weekends

28 Jan	John Muir Country Park	*O*	Mrs M. Watson
25 Feb	South Queensferry	*ML*	Mr J. Carlyle
25 Mar	Kilspindie to Gosford	*G*	Mr C. Rawcliffe
31 Mar	Vogrie Country Park, with B.S.E.	*ML*	Dr Chamberlain
5 May	Biel Estate	*G*	Mr A. Thomson
12 May	River Tweed and Stanhope Burn	*G*	Dr J. Slee
19-22 May	Wooler Weekend		
26 May	Killiecrankie R.S.P.B. Reserve	*G*	Mr M. Robinson
2 Jun	Bass Rock, with S.O.C.	*O*	Mr A. Brown
9 Jun	Glensax	*G*	Mrs H. Millar
10 Jun	Lamb and Fidra, with S.O.C.	*O*	Mr A. Brown
16 Jun	Craigleith, with S.O.C.	*O*	Mr A. Brown
16 Jun	Tailend Moss	*G*	Mrs B. Richardson
23 Jun	Peel Wood and Williamhope Farm S.S.S.I. with Central Borders Support Group, Tweed Valley Branch S.W.T.	*B*	
30 Jun	Gifford Circuit	*G*	Mrs M. Wood
7 Jul	Powdermill Glen	*GeG*	Mr B. Baird
14 Jul	forenoon - Oldcastles Farm (F.F.W.A.G.) afternoon - Hutton Bridge - Cripple Nick S.S.S.I.	*Con* *B*	Mr Cowe Mr M. Braithwaite
21 Jul	Ferry Hills	*B*	Mr J. Carlyle
28 Jul	Crichton Glen	*G*	Miss J. Raeburn
4 Aug	Laggan Fen S.W.T. Reserve	*DrB*	Mr M. Rebane
11 Aug	Cockburnspath Circuit	*G*	Mrs M. Watson
18 Aug	Newton St. Boswells - Dryburgh	*G*	Mrs V. McFarland
25 Aug	Red Moss - Logan Burn Waterfall	*B*	Miss J. Raeburn
1 Sep	Hopetoun Estate	*S*	Mr J. Stewart
8 Sep	Palacerigg and Antonine Wall with Dundee Naturalists' Society		
14-17 Sep	Glen Feshie Weekend		
22 Sep	Beecraigs Country Park with B.S.E.	*F*	Dr P. Mason

29 Sep	Hermitage of Braid	*T*	Mr R. Watson
6 Oct	Lomond Hills with B.S.E. and Pitcairn Society	*F*	Dr R. Watling
3 Nov	Musselburgh Lagoons and Kilspindie	*O**	Mr C. Pountain
24 Nov	Balerno Area	*Mam*	Mrs E. Farquharson
26 Dec	Coastal Walk and Sausage Sizzle	*G*	

Evening Excursions

2 May	Straiton	*SEE*	Mrs B. Smith
9 May	Erraid Wood	*Con*	Mrs B. Smith
16 May	Hermitage of Braid	*O*	Miss N. Henderson
23 May	Mortonhall Wood	*T*	Miss J. Raeburn
30 May	Torduff	*O*	Mr B. Clunie
6 Jun	Balerno Area	*Mam*	Mrs E. Farquharson
13 Jun	Colinton Circular	*B*	Miss J. Raeburn
20 Jun	Corstorphine Hill	*E*	Mr A. Liston
27 Jun	South Queensferry	*B*	Mr J. Carlyle
4 Jul	Boghall Glen	*Con*	Mr D. Gill
11 Jul	Gore Glen, near Arniston	*G*	Mrs M. Robertson
18 Jul	River Almond	*B*	Mr J. Carlyle
25 Jul	Eskside and Inveresk	*G*	Miss B. Gordon

*cancelled

REPORTS AND EXTRACTS FROM REPORTS

Full lists of animals and plants seen on outings and excursions are not included in the reports but are lodged with the Records Secretary.

Outing to John Muir Country Park - 28th January 1984

Only a super-optimist could have dared to suggest that a week which had brought parts of Scotland the worst winter weather for twenty years would end with so pleasant a day for our walk in the John Muir Country Park on 28th January. Though there was plenty of snow left on the hills, only a few patches remained at sea level; the high winds had abated, and the sun shone almost all day. The interest was mainly on the birds of the sea and estuary, with an ebbing tide from midday. During our lunch break in the dunes, a few Gannet were noticed well out to sea; four species of Gulls, Cormorant, Shag, Eider, Shelduck and Merganser were found in the estuary; and most of the other sightings for the bird list were of the common waders on the mudflats. We encountered the Park Ranger, Alistair Clunas, carrying the very thin corpse of a young Oystercatcher which had failed to survive the cold spell. A good skein of geese, believed from their call to be Pink-footed, flew in and eventually landed on the Tyninghame side of the bay.

At the furthest point of our walk, bordering Tynefield, we were entertained for about fifteen minutes by a Short-eared Owl, which seemed as curious to see us as we to see it. On our return to the car park, with the light fading, another Short-eared Owl was quartering the fields and dunes in that area.

M. Watson

Outing to Biel Estate - 5th May 1984

Twenty-two members braved a cold and foggy morning to gather, by diverse routes, at Biel in East Lothian, an estate about three miles west of Dunbar. The estate covers about 1500 acres (600 ha) and, as well as garden and parkland, contains farmland, mixed deciduous woodland and a conifer plantation. Clearly, only a small part of such a large area could be sampled on a relatively short visit.

In the morning we toured the garden and park under the guidance of the owner, Mr Charles Spence, and his wife, both of whom took a great interest in our visit. The garden descends in three large terraces from the south front of the house - where incidentally we saw the second Lord Belhaven's famous inscription "Traitionis Scotiae anno primo, 1707" (in the first year of the betrayal of Scotland) - to a huge lawn studded with magnificent trees. These trees are the best known feature of Biel and they include:

Beech (*Fagus sylvatica*), Holm Oak (*Quercus ilex*), Camperdown Elm (*Ulmus glabra* 'camperdown'), Italian Cypress (*Cupressus sempervirens*), Cedar of Lebanon (*Cedrus libani*), Wellingtonia or Giant Sequoia (*Sequoiadendron giganteum*), Ginko (*Ginko biloba*), Fig (*Ficus carica*) and Monterey Pine (*Pinus radiata*).

The flower garden, though not yet in full bloom, had something for everyone and greenhouses contained a number of unusual plants collected by Mr Spence himself.

In the afternoon the weather gradually improved and the party walked through the grounds following the Biel Burn for some way and passing the barley field for which Biel is also well known. Some heroic scrambling took us through woodland which was carpeted with primroses in full bloom and the leaves of a vast display of aconites. An unusual feature was a small field of narcissus.

Other plants in flower were:

White Butterbur (*Petasites albus*), Russian Comfrey (*Symphytum* x *uplandicum*), Red Dead-nettle (*Lamium purpureum*), Giant Hogweed (*Heracleum mantegazzianum*), Lesser Periwinkle (*Vinca minor*) and Ramsons (*Allium ursinum*).

Not many birds were spotted or heard but those that were included: Chiffchaff, Dipper, Chaffinch, Wren, Blackcap, Robin and Pheasant.

There was a good and lengthy sighting of an Orange Tip butterfly, and early arrivals saw Roe Deer which apparently abound in the woods.

A. Thompson

Wooler Weekend - 19th to 22nd May 1984

Twenty members spent an interesting weekend at Cheviot Field Centre belonging to Northumberland Archaeological Group. The first evening the Warden took us up the Harthope Valley where we saw and heard woodcock roding. He then gave us an introductory talk with slides on the area.

On Saturday we drove to Old Bewick and climbed up to the two Bronze and Iron Age hill forts which are side by side against a steep scarp, each with its own series of enclosing ditches and ramparts. We then walked on to the Blawearie Bronze Age cairnfield with more than 24 burial cists. Bodies were placed in a foetal position in a stone-lined cist, topped with a large capstone, which in turn was covered with a pile of stones. We continued across moorland and down a steep track through the woods to our vehicles. After dinner we were taken to see cup and ring carvings on a large rock at Roughting Linn and the circle of five tall Standing Stones at Duddo. In the evening light these looked most impressive.

On Sunday morning we followed the Coldgate Water through woods and open country seeing the birds and flowers appropriate to these habitats and in the afternoon visited the villages of Etal Castle and Ford on our way to Ford Moss. This belongs to the Northumberland Wildlife Trust. Here the peat is largely ombrotrophic and we found Cranberry (*Vaccinium oxycoccos*), Cotton-grass (*Eriophorum vaginatum*), Sundew (*Drosera rotundifolia*), Cross-leaved heath (*Erica tetralix*) and Bog myrtle (*Myrica gale*). Some members walked under the cliffs of Goatscrag Hill where fulmars were nesting at Roughting Linn. In the evening we visited Lilburn Pond where mute swans and cygnets were seen.

On Monday the weather broke so our planned walk through Thrunton Woods was cancelled. Instead, we were taken over Heatherslaw water-driven corn mill and the Errol Hut Smithy and Workshop at Letham Hill.

A. McCaffery

Evening Outing to Mortonhall Wood - 23rd May 1984

A party of 23 assembled at the car park on the edge of Mortonhall Wood on a lovely May evening. The Wood was laid out as an arboretum in the middle of the last century around two grassy glades, the tree planting probably spreading over a number of years. Some of the Yew trees were obviously planted several hundreds of years earlier than this.

We entered by a woodland path north of the house, where we saw a magnificent specimen of Western Hemlock (*Tsuga heterophylla*) covered in a mass of small light brown female cones. In the field over the fence from the arboretum we noted an Oriental (Caucasian) Spruce (*Picea orientalis*) with the smallest leaves of any Spruce.

On the west side of the first grassy glade were specimens of Sitka Spruce (*Picea sitchensis*), another Western Hemlock tree, an Atlas Cedar (*Cedrus atlantica*), as well as a Morinda Spruce (*Picea smithiana*), a native of the Himalayas, and the only fully weeping spruce. We noted its long and slender needles, round in section and curving forward. Nearer the east side of the same glade we recorded three species of false cypresses with flattened sprays and small cones - Lawson Cypress (*Chamaecyparis lawsonia*), Sawara Cypress (*C. pisifera*) and Nootka Cypress (*C. nootkatensis*). Nearby there was one true cypress, Monterey Cypress (*Cupressus macrocarpa*), with bunchy shoots and cones over 3 cm long. Our outing taking place in May gave us the opportunity of seeing the small male cones of the false cypresses shedding clouds of pollen.

In the second glade we were able to compare the three cedars: Cedar of Lebanon (*Cedrus libani*) with its level branches, Atlas Cedar (*Cedrus atlantica*) with tips of its branches ascending and Deodar (*Cedrus deodar*) with drooping branches, as well as to examine two members of the primitive Sequoia family (Taxadiaceae) growing side by side. These were Wellingtonia or Big Tree (*Sequoiadendron gigantea*) and Japanese Red Cedar (*Cryptomeria japonica*). Wellingtonia, first discovered in 1841 growing on the western slopes of the Sierra Nevada mountains, is the world's largest (but not the tallest) tree when growing in its own country. We felt its thick soft bark which is fire resistant, containing no resin. Japanese Red Cedar, a native of China and Japan, is similar but can be distinguished from the Wellingtonia by its larger scale leaves spirally arranged. Not far away we saw a Hiba tree (*Thujopsis dolabrata*), another native of Japan, but much smaller and with bright hard glossy leaves, yellowish green on the upper surface and with a white streak beneath.

We recorded 19 Gymnosperms in the arboretum. Broad-leaf trees were not so numerous, but they included a very fine Walnut tree (*Juglans regia*), Tulip Tree (*Liriodendron tulipifera*), Norway Maple (*Acer platanoides*) and Fern-leaf Beech (*Fagus sylvatica 'Heterophylla'*).

We thank Mr Alexander Trotter of Charterhall, Berwickshire, the owner of the estate, for allowing E.N.H.S. to visit the arboretum. If it becomes *'Open To The Public'*, a visit by all interested in trees is strongly recommended.

J. Raeburn

Outing to Killiecrankie - 26th May 1984

The following two paragraphs are based on a report by Martin Robinson in the R.S.P.B. magazine, 'Birds' in summer 1983:

Killiecrankie has an interesting range of habitats with birch and oakwoods, and grassland and moors where the yellow mountain saxifrage grows. Its bird life includes red breasted mergansers on the turbulent River Garry at the foot of its gorge.

'Killiecrankie' means 'the wood of the chattering trees'. It was probably given this name long ago because of the constantly rustling aspens that are a feature of this R.S.P.B. Reserve in Tayside. The aspens and oak-covered slopes plunging down to the River Garry have changed little since historic times and it was the R.S.P.B.'s wish to safeguard some of Scotland's precious ancient woodland that led the Society to establish a reserve in 1976 by agreement with owner Mr James Murdoch, and extended in 1982 to include birch woodland and moorland as well as farmland. The reserve totals 395 ha (950 acres). The farms are now let.

On Saturday, 26th May 1984, a party of members of the Society paid a first visit to this delightful reserve. We were received there by the Warden, Mr Martin Robinson, and taken round by him. There is much to interest the naturalist. We heard Wood, Garden and Willow Warblers and Tree Pipit, Great Spotted Woodpecker and Mistle Thrush were seen. There were several Pearl-bordered Fritillary and one Small Heath butterfly. The flora included Chickweed Wintergreen, Cowberry and Early Purple Orchid with Sundew and Butterwort in the boggy areas and a stand of the melancholy Thistle.

Further visits to study the insects, particularly the moths and spiders, the mosses and liverworts, the ferns or the fungi would be very worthwhile.

M. Robertson

Outing to Peel Wood and Williamhope Farm S.S.S.I. - 23rd June 1984

With Central Borders Support Group, Tweed Valley Branch, S.W.T.

Members of the Tweed Valley Branch of the S.W.T. and of our Society turned out in good numbers for our exploration of Peel Wood and Williamhope Farm S.S.S.I. We tended to split up into groups as there were nearly forty of us and we were lucky to have the help of grass and butterfly experts as well as excellent botanists who knew their area very well.

Before we entered the woodland we explored the grassy area beyond the car park and noted the lovely Wood Cranesbill (*Geranium sylvaticum*) and some good specimens of ferns including Lady-fern (*Athyrium filix-femina*), Scaly Male-fern (*Dryopteris pseudomas*), Mountain Fern (*Oreopteris limbosperma*) [was Lemon-scented Fern] and Broad Buckler-fern (*Dryopteris austriaca*).

Peel Wood is natural old woodland with many oak trees, including a Red Oak (*Quercus borealis*), Bird Cherry (*Prunus padus*) which was in flower, and we noted Gean or Wild Cherry (*Prunus avium*), Hazel (*Coryllus avellana*), Ash (*Fraxinus excelsior*), Elder (*Sambucus nigra*) and Alder (*Alnus glutinosa*). Briefly we heard the song of the Wood Warbler, Tree Creeper (later seen), Blue Tit, Wren and Goldcrest. There are many herbs, including grasses, on the floor of the wood and it was pleasing to find Hairy Stonecrop (*Sedum villosum*), Wood Speedwell (*Veronica montana*), Wood Melick (*Melica uniflora*) - a grass, and the introduced species Salmon Berry (*Rubus spectabilis*) from North America.

The stream provided another woodland habitat. There were three Stitchworts, Greater Stitchwort (*Stellaria holostea*), Lesser Stitchwort (*S. graminea*) and the less common Bog Stitchwort (*Stellaria ansine*). Meadow-sweet (*Filipendula ulmaria*), Lady's-mantle sp (*Alchemilla* sp), Figwort (*Scrophularia nodosa*), Wood Sanicle (*Sanicula europaea*) and the hybrid Water Avens (*Geum rivale* x *intermedium*) were also present as well as Opposite-leaved Golden Saxifrage (*Chrysosplenium oppositifolium*) and Alternate-leaved Golden Saxifrage (*C. alternifolium*). A frog and a toad were found, to the delight of the children on our outing. Mrs Jean Murray guided our morning walk, which gave us great pleasure.

In the afternoon we explored a moorland habitat, guided by Mrs Little. We walked beside Glenkinnon Burn with Peel Hill (302 ft) and Ashiestiel Hill (401 ft) on our right, and Craig Hill (382 ft) and Yair Forest on our left. There are some fine Alders by the water and some of us saw Siskin here. There was also a pair of Redstart which flew into the trees. Amongst the moorland vegetation we were delighted to see the Heath Spotted Orchid (*Dactylorhiza maculata* sub sp *ericetorum*) and the Common Butterwort (*Pinguicula vulgaris*) with Common Sedge (*Carex nigra*) and Carnation Sedge (*Carex panicea*). Later, we were shown the delightful Fragrant Orchid (*Gymnadenia conopsea*).

A pleasing find beside the track was the Fragrant Agrimony (*Agrimonia odorata*). At the old garden dump we saw Small Tortoiseshell caterpillars on nettle and found Tansy (*Tanacetum vulgare*), Apple-mint or Round-leaved Mint (*Mentha rotundifolia*) and Sticky Mouse-ear (*Cerastium glomeratum*). [We found four species of buttercup, Creeping Buttercup (*Ranunculus repens*), Meadow Buttercup (*R. acris*), Bulbous Buttercup (*R. bulbosus*) and Goldilocks (*R. auricomus*), which is unusual for one outing.]

The cold wind and afternoon rain kept the insects down but we did find a Brown Argus Butterfly on Rockrose and a Green Lacewing Fly and a Birch Sawfly.

A very successful outing: our thanks are due to the leaders and members of the Central Borders Support Group, Tweed Valley Branch, S.W.T. for showing us such a lovely area with its variety of habitats and for being so enthusiastic about it, as it rightly deserves.

M. Robertson

Gifford Circuit - 30th June 1984

On a warm sunny June day, 23 members of E.N.H.S. met at Gifford to go into the Lammermuirs. The drive to the starting point above Faseny Cottage (NT 610 634) was quite delightful. There are good hedgerows on the way into the hills and they were bright with deep pink Wild Roses (*Rosa villosa*) and creamy flowers of Elder. Arrived at the starting point, we soon set off down the track to the Faseny Water. Meadow Pipits were flying about. We chose the safer of the two bridges to cross the Faseny, then got across the Lamb Burn to walk downstream on the west bank of the Faseny. We saw families of Common Sandpiper and at the bridge Dippers and Pied Wagtails. Wheatear were seen on the hillside near the cottage, also a female Ring Ouzel. We took a long time to walk down this water to the Hare cleugh. There was a lot going on and the river seemed a live thing. There were several sightings of Common Sandpiper and Dipper and some more Wheatear and Teal. A pond has been made by the side of the river and this is where the Teal were. We were sure they had young ones but did not linger to find out as this would have caused distress.

The ground cover was largely Ling Heather (*Calluna vulgaris*), Blaeberry - Bilberry (*Vaccinium myrtillus*), Crowberry (*Empetrum nigrum*), Bracken (*Pteridium aquilinum*) and Mat-grass (*Nardus stricta*). There were a number of mosses. We also found Common Sedge (*Carex nigra*), Deer-grass (*Scirpus cespitosus*) and Heath Rush (*Juncus squarrosus*).

Among the plants in flower seen along this water were Heath Speedwell (*Veronica officinalis*), Heath Bedstraw (*Galium saxatile*), Tormentil (*Potentilla erecta*), Bitter Vetch (*Lathyrus montanus*), Heath Spotted Orchid (*Dactylorhiza ericetorum*), a lovely clump of Mimulus (*Mimulus luteus*) in the water, New Zealand Willowherb (*Epilobium nerterioides*) on the wet stones, Ivy-leaved Crowfoot (*Ranunculus hederaceus*), and, best of all, a lovely patch of pink Hairy Stonecrop (*Sedum villosum*) in perfect bloom.

In addition to bracken which was widespread we saw Mountain Fern (once known as Lemon-scented Fern) (*Oreopteris limbosperma*), Hard Fern (*Blechnum spicant*), Scaly Male-fern (*Dryopteris pseudomas*) and a small growth of Oak Fern (*Gymnocarpium dryopteris*).

We walked up the Harecleugh Burn. Where it divided we took to the higher ground and began to see Mountain Hares. There were several sightings of them. When seen on the skyline they looked adorably comical with their paws in the air. We had a good view of a Golden Plover, Skylarks and Meadow Pipits.

We crossed over Little Says Law, made for the boundary fence and followed this westward to Meikle Says Law, where there is much Cloudberry (*Rubus chamaemorus*). This was in flower and here and there in fruit. Arrived at the Trig point we decided to have a rest and enjoy the view. We identified the hills around and the islands in the Forth.

Setting off for the final part of the walk down the shoulder of Dun Side, we put up a family of young Grouse. Then Elizabeth Landells saw something of interest. Bringing up the rear and keeping her eyes skywards, she saw a party of crows playing in the sky and another bird with them which they seemed to be mobbing. It broke away and soared and then dived powerfully upon them. She had a good view of it and it was a Peregrine. So that was quite something. We should always look at Crows!

Our young friend, Kevin, who likes to study birds and insects had a good day. In addition to an Oak Eggar Moth Caterpillar on heather, he found four different species of burying beetles: *Necrophorus humator*, *N. investigator*, *N. vespilloides* and *Phosphuga atrata*.

We had lovely weather and a very enjoyable day.

G.M. Wood

From Roslin to Penicuik - 7th July 1984

The group of 16 members met at the ruined gate house of the Old Roslin Powder Mill at 11 o'clock on a bright sunny day. We discussed the history of the powder mill through its long working life from 1807 until 1954, from gunpowder to gelignite and water power to the gas turbine. The party then set off along the main track through the powder mill looking at the exposures of the Carboniferous Sandstone in the various embayments made alongside the track. We discussed the decalcification of the surface rock and also looked at the abrupt changes from shale to sandstone within the sedimentary sequence. Although the trees in this area are now quite mature timber they are second growth, planted after the wood had been originally felled to make charcoal for the powder industry. There is not therefore the same range of tree and herb species in this area as there is further down river opposite Roslin Castle.

The fine display of brown butterflies alongside the track were tentatively identified by me as the "Gatekeeper", but were almost certainly just orangey variants of the "Meadow Brown". My suggestion that they must be "Gatekeepers" because they occurred around the gatehouse, was treated with the contempt it deserved. It was sad that even on this very hot and ideal butterfly day we only saw Meadow Browns, one white, several Common Blues and a few Small Tortoiseshells. The reduction in the number of butterflies in the countryside over the last forty years has been quite extraordinary.

We stopped at the bridge over the Esk by the weir to look at the exposure of the Carboniferous rocks in the cliff below the Hare Craig. This is a quite superb section showing in an upward sequence, sandstones and shales rhythmically and almost horizontally bedded, followed by fireclay or blaes and finally a massive sandstone which has channelled the fireclay. Just over the bridge we looked inside one of the best preserved of the old gunpowder magazines with its thick stone walls and curved stone roof. We turned away from the river just before reaching the old cooperage at Kirkettle mill and struck off up the path towards the track of the Old Eskbank to Penicuik railway. On the dry grassy bank just before we reached the railway track a fine colony of the garden escape Orange Hawkweed (*Pilosella aurantiacum)* was in full flower. We descended into the cutting of the old railway and started to walk towards Penicuik. Shortly afterwards we stopped to admire a very fine stand of the lovely flower Common Wintergreen (*Pyrola minor*). By now a lunch stop had been agreed at the Firth viaduct and a hungry party was galloping away along the track leaving the leader trailing behind. I realised that all was now lost, at least until after lunch, when I found myself discussing variation in sycamore trees with an audience of two. We settled down for a well earned lunch just beside the Firth viaduct and within a few feet of a very fine Pendulous Sedge (*Carex pendula*) which we could all admire while still eating our buns. Before moving off after lunch we examined a fine stand of Hairy St. John's Wort (*Hypericum hirsutum*) growing on a nearby woody bank.

The party was now quite refreshed and set off towards Penicuik at a good speed passing the only working paper mill in the Esk valley at Dalmore. We passed under the B7026 by the old railway tunnel and came out at the ruined Auchendinny station. By the side of the track behind Glencorse Barracks we found Figwort (*Scrophularia nodosa*) and in the more open area beyond the lovely summer blue of Field Scabious or Gypsy Rose (*Knautia arvensis*). A diversion into the Beech wood between the track and the river on the outskirts of Penicuik resulted in the party discovering one of the many interesting alien species of plant which occur in this area. This particular stranger was Fringe Cups (*Tellima grandiflora*), a native of North America but thriving in its new home. We stopped for a brief break at the end of our trip above the salubrious scene of the Penicuik sewage works where we discussed Hairy Tare (*Vicia hirsuta*) and the Orchids which we had seen alongside the track and decided were *Dactylorhiza* spp.

Having had enough of the sewage works we now retraced our steps but not before one of the party discovered Cut-leaved Elder (*Sambucus nigra* var. *laciniata*) almost by the sewage works fence. This garden escape is rather unusual and much prettier than its common parent. Near the old railway bridge over the Esk behind Beeslack estate, an unusual purple variety of the Common Hogweed (*Heracleum sphondylium*) was spotted and a specimen was later sent to Jennifer Lamont at the R.B.G. for identification. Returning along the track we talked about the relatively small number and range of wild birds we had seen, but were rewarded for diligence at the old railway bridge over the Esk at Auchendinny where we had a session of watching a feral mink, which appeared from a drainpipe on the river bank, watching the Natural History Society. As we left the old railway track above the powder mill, we broke into two parties, the tired and weary wending their way back through the Old Powder Mill while the fit and foolish clambered along the east bank above the Esk to look at Badger setts. We descended to the road again by crossing the Esk on the walkway between the water pipes and the party split up at the Gatehouse where we had started our hot and interesting day some six hours previously.

Bill Baird

For notes on Geology of this walk, see page 21 of this Journal.

Visit to an S.S.S.I. on the Whiteadder - 14th July 1984

An area on the north side of the Whiteadder to the west of Hutton Bridge (NT 922 546), near Foulden, is designated an S.S.S.I. (Site of Special Scientific Interest), because of the geological interest.

Mr Michael Braithwaite led the party along the 2 km stretch of the riverside, which is mainly Calcareous Sandstone and covered by old rough grassland and some scrubby woodland. Fifty species of plants were observed, some worthy of note, including:

> Flowering Rush (*Butomus umbellatus*) which grows at the riverside amongst the Reed Canary Grass (*Phalaris arundinacea*) is an introduced rarity to Scotland. Green Figwort (*Scrophularia umbrosa*) has a very scattered distribution in Britain, but is common in lowland Berwickshire. Wood Club Rush (*Scirpus sylvaticus*) has a local distribution. Marjoram (*Origanum vulgare*), Fairy Flax (*Linum catharticum*), Glaucous Sedge (*Carex flacca*), Restharrow (*Ononis repens*), Meadow Oat Grass (*Helictotrichon pratense*), are all fairly common but require calcareous soils. Also seen were two

patches of Chalk False-brome or Tor-grass (*Brachypodium pinnatum*), a grass which is very rare in Scotland, and Purple Moor-grass (*Molinia caerulea*), more usually found on wet moorland. Wild Pea (*Lathyrus sylvestris*), growing on a wet rocky outcrop, occurs in the south of England and is a very rare introduction to Scotland.

Many Ringlet butterflies and Six-spot Burnet moths were in flight. Many of the Ragwort plants provided food for the caterpillars of the Cinnabar moth and Common Field (*Chorthippus brunneus*) and Common Green Grasshoppers (*Omocestus viridulus*) were chirruping in the grass.

Mr Braithwaite told us that the many anthills in the area and the woodland on the opposite side of the river provided a perfect site for the Green Woodpeckers.

E. Gillespie

North Queensferry Circular Walk - 21st July 1984

Twenty-two enthusiastic members of the E.N.H.S. set out on this walk which covered several habitats, coastal, marsh, pond and woodland. The rock here is basalt and there is some calcareous grassland which gives a varied and interesting flora.

At the onset there was the difficulty of separating out the yellow-flowered plants, some with white juice, some without; some with basal leaves, some with leaves up the stem; finally we did see Nipplewort (*Lapsana communis*), Cat's-ear (*Hypochoeris radicata*), Autumn Hawkbit (*Leontodon autumnalis*), Lesser Hawkbit (*L. taraxacoides*) and Smooth Hawk's-beard (*Crepis capillaris*).

Considering the abundance of fruits on Oak, Beech, Hawthorn this year, it was surprising we found no sloes on the Blackthorn (*Prunus spinosa*), probably due to the frost we had had in these parts in early April. We had a chance to compare Mugwort (*Artemisia vulgaris*) with Wormwood (*Artemisia absinthium*), a pleasantly aromatic plant. The Bloody Cranesbill (*Geranium sanguineum*) flowers were almost over, but the 'Dune' Meadow Rue (*Thalictrum minus* ssp *arenarium*) was in full flower. One flower of Hairy Rock-cress (*Arabis hirsuta*) and two flowers of Wild Liquorice (*Astragalus glycyphyllos*) were seen. These plants along with Purple Milk-vetch (*Astragalus danicus*), Fyfield Pea (*Lathyrus tuberosus*), Knawel (*Scleranthus annuus*) are disappearing from this area. One plant which has increased its area is the Wood Vetch (*Vicia sylvatica*) which usually grows at the edge of woods, but in this case at the side of a small pond. It also grows near the sea: Tantallon Castle grounds has large patches of this beautiful flowering plant. Near the old toll at Inverkeithing there was a bank of Soapwort (*Saponaria officinalis*), not yet in flower, but worth going a long way to see it when it is. The flowers are pink, one inch across, double flowers are not uncommon and it usually blooms there in August. The above plants are only a small part of the flora seen in this area which includes ferns, rushes, sedges, pond and seashore plants.

Near the start of the north end of the Road Bridge, dozens of Six-spot Burnet moth (*Zygaena filipendulae*) were feeding or landing on Field Scabious (*Knautia arvensis*), Viper's Bugloss (*Echium vulgare*) and on the yellow-flowered umbel of Wild Parsnip (*Pastinaca sativa*). The Burnets are very poisonous, the eggs and caterpillars containing prussic acid. They exude a poisonous yellow fluid when touched. The males mate with the female as soon as she emerges from her cocoon.

It was a pleasure to lead this outing - the members showed a keen interest in everything seen.

J. Carlyle

Outing to Crichton Glen - 28th July 1984

Thirty-four members met at Crichton Church car park to spend the day examining some of the habitats in Crichton Glen, a valley through which flow the upper reaches of the Tyne Water. The valley is U-shaped and so steep-sided. As it has not been drained or 'improved' for agriculture (recently a small part of the grassland has been ploughed) it supports a wide range of habitats.

From the church we walked on the top edge of the valley to Crichton Castle along a path which crosses unimproved grassland, on which cattle graze. Amonst the plants in the grass we found Burnet Saxifrage (*Pimpinella saxifraga*) and Quaking Grass (*Briza media*), indicating soil containing calcium salts. The steep slope below the edge down to the banks of the Tyne Water is covered with bracken, suggesting that the calcium salts become removed by the soil water draining downwards. (Bracken is not usually found on calcareous soil.)

The Glen is rich in bird life. Throughout the walk, Elspeth Hamilton led the way, recognising for us birds by song and sight before they could be disturbed by the flower enthusiasts bringing up the rear. From the top of the slope two Whitethroats were seen and heard still giving their vertical song-flight.

Past the castle we followed the steep, rough path downwards through a scrubby area. Here on this south-west facing slope were very good stands of Blackthorn. The sloes had formed and showed up green and plentiful on the bushes. From the path we had a very good view of the Alder wood containing very fine trees on either side of the Water below. When we reached the valley bottom we crossed a marshy area to Birky Bank Wood - a semi-natural woodland growing on the side of the Glen. It is one of the best remaining examples of native woodland remaining in Midlothian and includes Hazel, Oak, Birch, Ash, Elm and Holly. Here we heard the call of the Green Woodpecker.

After lunch on the grassy bank near the wood side, we returned to the level of the Water and the valley bottom to examine the marsh in the area below Crichton Castle. This marsh, which is considered the largest one remaining in Midlothian, has a characteristic marshland flora. We were particularly pleased to find both Water Horsetail (*Equisetum fluviatile*) and Marsh Horsetail (*Equisetum palustre*), as well as the less common, Greater Tussock Sedge (*Carex paniculata*). Hemp Agrimony (*Eupatorium cannabinum*) was flowering well and there were good patches of Branched Bur-reed (*Sparganium erectum*). Common Spotted Orchid (*Dactylorhiza fuchsii*), Northern Marsh Orchid (*D. purpurella*) and Ragged Robin (*Lychnis flos-cuculi*) were still in flower. From the bushes on the marsh came the 'reeling' song of the Grasshopper Warbler. The Sedge Warbler was both seen and heard.

From the marsh we climbed up the steep wooded slope back to the car park, near Crichton Church.

J. Raeburn

Cockburnspath Circuit - 11th August 1984

At our assembly point in Cove, we looked down on the interesting geological features of the bay, and watched the colony of Rock Doves and the House Martins which use the natural rock ledges for their homes instead of the eaves produced by man. We first straggled along the narrow cliff top towards Pease Bay, from which there were fine views of the Old Red Sandstone formations around Cove harbour and of the coastline towards Fast Castle Head. Plants noticed here included Marsh Woundwort (*Stachys palustris*) and Hemp Agrimony (*Eupatorium cannabinum*). A very large murmuration of Starlings was seen, apparently settling on the cliff tops for a midday rest. Paths through Cove Farm fields added many of the "weeds of cultivation" to the flower list. Seeking shade from the hot sun and a place for lunch, we walked down to Cove Harbour beach. Access is through the rock tunnel, beside the jetty.

Ascending the hill again, a very short stretch on the A1 road led us to a lane across the old Dunglass Bridge which was the route of the Great North Road in post-horse days. A path along the deep wooded dene took us under the A1 and towards the entrance to Dunglass Estate. A fine specimen of Strawberry Tree (*Arbutus unedo*) and several Holm Oak (*Quercus ilex*) were noted. We then spent some time in the welcome coolness of the ruined Collegiate Church, dating from the 15th century, with its roof of huge stone slabs. A Spotted Flycatcher was seen here and a pair of Kestrels, also Dabchick (Little Grebe) on the nearby lake.

Some of the party voted to take a leisurely stroll back towards the seashore, the rest continued a walk through the estate. Near the gamekeeper's cottage were numerous pheasant chicks which had been reared under broody hens, and we saw Roe Deer slots along one of the woodland rides. Enchanter's Nightshade (*Circaea lutetiana*) and Wild Angelica (*Angelica sylvestris*) were among the flowers listed here.

Leaving the Estate at the hamlet of Bilsdean, we crossed the A1 to descend the deep wooded glen, carpeted with ivy and ferns, particularly Hart's-tongue (*Phyllitis scolopendrium*), but where the waterfall was reduced by drought to a trickle. Our stroll along the shore back to Dunglass Dene gave us sightings of Gannet, Shag, Cormorant, Eider, four species of gull, and some waders, including Greenshank, and the path to our dispersal point had some good plants of the edible goosefoot, Good King Henry (*Chenopodium bonus-henricus*) growing among the Sea Buckthorn.

M. Watson

Outing to Palacerigg and Antonine Wall - 8th September 1984

With Dundee Naturalists' Society

Twenty-nine members of the Society and members of the Dundee Naturalists' Society met at Palacerigg Country Park for a joint outing. We were welcomed by Mr Thomson, the Director, who gave us a brief outline of the history of the Park before taking us on a tour of the area. This now covers 720 acres and includes the Municipal Golf Course. In the ten years since the Park was developed great changes have taken place. It was ecologically degraded marginal land with less than 3 acres of trees, mainly Sitka Spruce with some Scots Pine, the hedgerows had almost disappeared and the Scots Pines by Fannyside Loch had been badly wind blown. Now the trees in the wood have been felled and replanted. Other areas have been planted so the landscape has greatly changed in the last few years. Indigenous trees, such as Birch, Oak, Rowan, Ash and Gean, have been planted in different parts of the Park, as well as the introduced Sitka Spruce. Two large areas have been planted with Scots Pine and a smaller area with "Caledonian" Scots Pine from the Black Wood of Rannoch. Round some of the new woodlands a fringe of cover of Hazel, Dog Rose, Hawthorn and Guelder Rose has been planted. The Guelder Rose fruits made a lovely bright splash of colour.

Farming has been developed, partly to provide food for the large number of grazing animals. The Park has a herd of Aberdeen Angus cows with a bull: it also has Highland Cattle and Belted Galloways. Rare breeds of sheep are kept: Jacob, Wensleydale, Shetland, Hebridean, Soay and Gotland. Then, too, there are Tamworth Pigs, the nearest to the wild pig, we were told. There are some Badger setts in the Park and Foxes are known to be breeding there - we found some fox droppings. There is an area with Fallow Deer and another with Red Deer - Roe Deer are breeding wild in the Park.

It was pointed out to us where the old Palacerigg Station had been and there were still signs of the single line railway which was built in 1908 to transport peat and later firelighters to Greengains junction, then to Glasgow. In 1908 Palacerigg became one of Glasgow's relief schemes for the unemployed, 600-800 men boarded trains daily at Buchanan Street Station for Cumbernauld, then they tramped up the hill to Palacerigg to join the 90 men who were living at Palacerigg Farm Colony. The land was wet and sour so tons of ash and burnt refuse were brought from Glasgow to try to improve the soil. To this day signs of this can be found. The farm project was not successful but in 1920-29 the Peat Colony was very active. Peat (shredded) was used for animal bedding, for fires and also for firelighters.

We came away thinking of the great changes which had gone on in that area over the years. First the Farm Colony Project, then the Peat Colony with its little one-line railway linking it up to the City. Now the appearance has changed, new ponds have been made, new areas of woodland have been planted, successful animal husbandry has been going on and farm crops are grown satisfactorily. So the Park is now self supporting in hay and the cattle have 60 acres of grazing land.

Palacerigg is recognised as part of the Central Scotland Woodland Project Scheme to re-establish woodlands, which is being carried out under the direction of the Countryside Commission.

The second half of the outing was a visit to the Antonine Wall and to Rough Castle. Many of the Forts had turf walls but this one - which was one of the principal stations on the Antonine Wall - was built of stone, although it shows up now only as a green mound.

B. Gordon

Glen Feshie Weekend - 14th-17th September 1984

The September weekend was based on Glen Feshie were 22 members stayed in great comfort in the purpose built Lagganlia Outdoor Centre which is run by Lothian Region.

We were greeted on arrival by Mr Ian Ross, who later in the evening gave us an introductory talk on the area and on the work being done at the centre with the school parties from Lothian Region. He also put on an attractive wildlife film for our entertainment.

E. Farquharson

Saturday, 15th September

From a very indifferent start, weatherwise, the day turned out to be a fine one indeed. Dull grey, sunless skies gradually changed to blue with fine white clouds and warm sunshine.

The party travelled from Lagganlia to Achlean, from where, under the supervision of the Senior Instructor, Ian Ross, we walked south towards the head of Glen Feshie. Ian Ross explained to the company the ways by which glaciation and other climatic factors had shaped the valley and the many changes which had taken place, by natural factors and the hand of man, over the centuries since the last ice-age.

The company then walked along the east side of the valley, through Pine trees and young new plantings. Several members were gathering fungi - the collection at the end of the day bore testimony to their sharp eyes and enthusiasm. During the day several species of birds were seen including Heron, Dipper, Grey Wagtail, Coal Tit, Great Tit and Goldcrest. The season for wild flowers was largely past but there were fine fresh-flowering clumps of Heather and Cross-leaved Heath and Bell Heather. Also noted were Heath Milkwort, Petty Wain (*Genista anglica*), Yellow Saxifrage (*Saxifraga aizoides*), with only an odd flower, Devil's-bit Scabious, Cowberry, Bearberry and Blaeberry, Red Rattle, Compact Rush and Soft Rush, both of which carried a large number of pupal cases of the small moth *Coleophora alticollela*.

Lunch was taken by most of the company at the old bothy of Ruigh-aiteachain in beautiful calm, warm conditions and a thoroughly relaxing time was enjoyed by all. The walk back to Achlean was equally enjoyable and all were ready for their evening meal.

A moth trap located in the wood beside Lagganlia caught the following species: Angle-striped Sallow, Grey Chi, Flounced Chestnut, Black rustic, Autumnal Moth, Red-green Carpet, Autumn Green Carpet, Common Marbled Carpet.

P. Brown

On Saturday evening members showed slides of mountain flowers, fungi found in the area and Speyside scenery.

Sunday, 16th September

Sunday was spent in the Rothiemurchus area, the more energetic exploring Glen Einich and the Larig Ghru, while the majority followed a circular route from Coylum Bridge to the Cairngorm Club Bridge, and from there over to Loch an Eilein. With time to spare, we continued round Loch an Eilein and Loch Gamhna, and then back to the cars through the woods past Lochan Mhor. Crossbills, Crested Tits and one Osprey were seen during the day. The heather was well past its best but provided a little colour here and there. Fungi were plentiful and many were taken back to Lagganlia and laid out in the laboratory along with grasses and rushes.

The walk had taken us through the pine, birch and juniper of the old forest where the trees are uncrowded and have grown to their full stature and beauty. We also passed through planted areas where the trees must be near their maximum height and other parts where the trees are still quite small.

The three lochs each have their own appeal. Loch an Eilein, large, popular with holidaymakers, and the view of the water frequently obscured by trees; Loch Gamhna lying just behind the larger loch, with a twisting shoreline and surrounded by moorland and birch scrub; Lochan Mhor, peaceful and seldom disturbed, where Roe Deer and Red Squirrels can often be seen, and where earlier in the year the water lilies flower in a perfect setting.

In the evening one of the members showed us very interesting slides taken during a tour of New Zealand. The Centre then very kindly put on two wildlife films.

E. Farquharson

Monday, 17th September - a visit to Insh Marshes

On the final morning of our autumn weekend we met Zul Bhatia, R.S.P.B. warden of Insh Marshes. He led us round the newer part of the Reserve which was acquired just three years ago. It is an area of birchwood: many of the older trees had bracket fungi on them. Many young birch had been planted, also eight oak trees. They were well protected by fence enclosures from rabbits. Juniper, hazel, alder and willow grow in this area too. The land has been over-grazed in the past and the natural vegetation of heather and blaeberry has suffered in consequence.

Flocks of small birds flew from tree to tree as we walked about the Reserve. Chaffinch, Siskin and Coal Tit were most numerous though Blue Tit, Great Tit and Long-tailed Tit were there, too. Far away in the wet area a solitary Heron could be seen and a Mallard or two now in eclipse.

We scanned the open area for birds of prey. Zul had said seven Hen Harrier had visited this year; we, however, had to be content with one Buzzard!

Redstarts had nested in the Reserve, also Goldeneye. Some had used the nesting boxes as had owls and tits; others had set up house on their own. One nesting box had been used by the honeybee and in one hollow birch a piece of honeycomb was found.

For several minutes, a Great Spotted Woodpecker flew from tree to tree giving us a splendid view of the red patches on its head and tail.

After this we headed back towards our cars and after a vote of thanks to Zul drove to a lunch-stop at Ruthven Barracks.

M. Woolgar

Mammal Trapping - 20th-24th November, 1984

Twenty-eight traps, placed in pairs at 10 yard intervals, were laid along an old and well-kept hawthorn hedge at Balerno. The traps had been put out on Tuesday morning (20th) and during the four-day trapping period, were visited twice daily between 8.45 and 9.30 a.m. in the morning and between 4.30 and 5.15 p.m. in the afternoon. On Saturday, when the traps were due to be lifted, inspection was delayed until 11 a.m. to enable members to participate. In a strong chilly wind, 18 members made a most welcome windbreak and helped with the identification of the species caught.

During the four days there was a total of 30 catches, 27 found in the morning visits and only 3 in the afternoon. Fourteen Wood Mice (*Apodemus sylvaticus*) were caught in the morning, 1 in the afternoon; 11 Bank Voles (*Clethrionomys glareolus*) in the morning, 1 in the afternoon; and two Common Shrews (*Sorus araneus*) in the morning and 1 in the afternoon. The greater number in the morning of all species could be in part due to the longer overnight time (roughly 17 hours) during which they could enter the traps compared with 7 hours during the day. It could also be due to the greater activity of Wood Mice during the night and of Bank Voles at dusk and dawn.

The markings of the catches by furclipping was very substandard at the beginning of the week when scissors were forgotten for the first 24 hours, followed by an evening visit when it became so dark that furclipping by torchlight was tried and the victim - a Wood Mouse - made his escape! Nevertheless, on Friday, 3 of the 7 catches had been caught previously and on Saturday members were able to see clearly that 6 of the catches out of 9 had been furclipped earlier in the week.

E. Farquharson

THE LIBRARY

I would like to remind members that, as well as the books which can be borrowed for general reading, there are also a number of books available for use on Field Trips. Subjects included are Fungi, Butterflies and Moths, Pond Life and Seashore, Grasses and Trees.

In addition, there are copies of reports of local interest - such as Vegetation Surveys of the Pentland Hills and Gladhouse Local Nature Reserve and Biological Surveys of the Union Canal.

These are all available at meetings of the Society in the Guide Hall or by contacting me.

A recent addition to the Library in the New Naturalist Series is "Inheritance and Natural History" by R.J. Berry.

F. Howie

GRANTS FOR FIELD COURSES (IAN SIME FUND)

Members of all ages are reminded that grants are available from the Ian Sime Fund for attendance at Field Courses.

Application for grants should be made to a member of the Sime Committee listed below.

President (ex officio) - Mr W.D. Gill

Hon. Secretary (ex officio) - Mrs C. Stewart

Hon. Treasurer (ex officio) - Mr A. Dickson

Elected member - Mrs E. Farquharson

If at any time more applications are received than the Fund can handle, preference will be given to younger members.

See "Ian Sime Fund" - E.N.H.S. Journal 1983, page 3.

MICROSCOPES

The Society has acquired two more microscopes for use by members. Any member who would like the use of one should apply to:

Miss J. Raeburn
37/2 Dreghorn Loan
Edinburgh EH13 0DF

for details and borrowing arrangements.

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THE
EDINBURGH
NATURAL HISTORY SOCIETY

JOURNAL

-1985-

ISSN-0141-7088

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EDITORIAL

The Editorial Committee would like to thank members for their articles, observations, notes on natural history, records of surveys and accounts of excursions.

We are particularly pleased to receive an article from Dr John Sheldon, Regional Ecologist on conservation and recreation on the Lothian reservoirs, several of which lie in the Pentlands. In introducing the topic with background information, Dr Sheldon stresses the value of the wildlife of the reservoirs.

By the time this Journal is printed the result of the Public Enquiry into the proposed Pentland Regional Park should be known. Whatever its outcome the information collected by Dr Sheldon on Pentland reservoirs will help to formulate a positive approach to their wildlife and ensure that the wildlife sites will be protected and cherished.

The Journal contains accounts of two Field Courses at Kindrogan, one in August on Fungi by Eunice Smith, and a second in October on Autumn Birds by Eleanor O'Donnell. There is also an account of a Field Meeting organised by the Botanical Society of Edinburgh and the British Mycological Society to survey the cryptogams of the Strathfarrar area in which two of our members participated. It is hoped that by reading these accounts members will be stimulated to attend courses at Field Centres. They are reminded that it is in order to apply for a grant from the Ian Sime fund to cover some of the cost.

Our thanks are due to the Excursion Committee for arranging a very interesting programme of outings throughout the spring and summer. Although, probably on account of the worst summer weatherwise in living memory, the excursions were not so well attended as in previous years, they were very much appreciated by those who took part.

Duncan Gill's term of office as President came to an end in October and we thank him for his leadership over the past three years. We welcome Vida McFarland as his successor.

We thank Margaret Mowat who is retiring as Records Secretary for all her enthusiastic, hard and careful work.

We give our thanks to the Secretary and Assistant Secretary for the Society's smooth running throughout the year; to the Honorary Treasurer and Honorary Auditor who deal with our financial affairs; to the Minutes Secretary, Librarian and Projectionists and last but not least to the Caterers who provide refreshment at meetings. We are glad that once again Gordon Finnie and his associates and Frances Anderson are helping us with the production of the Journal.

* * *

We record with sorrow the death during the year of Dr A. Fraser who was appointed a member of the Council in 1984; also Miss B. Gordon and Mrs M. Wood. For nearly 30 years Brenda Gordon was a very active and well-loved member of the Society and recently as Convener of the Excursion Committee she organised with meticulous care many of our excursions. Although not such a long-standing member and not an office holder, Mary Wood will be remembered with affection by all, for her great enthusiasm - there were very few Society meetings and outings when Mary was not there.

THE GUNN BEQUEST FUND

This fund was started with a Bequest from Agnes Gunn in memory of her brother, Mr P.W.G. Gunn, who was a long and loved member of the Society until he died in April 1978.

The Gunn Fund was formed in October 1981 - the monies bequeathed to be used in various ways for the use of the Society. The expenditure from this Fund is indicated as follows:

1 October 1981 to 30 September 1982		£
23/ 3/82	Botanical Society of Edinburgh - Appeal	200.00
9/ 6/82	pH meter	105.08
		305.08
1 October 1982 to 30 September 1983		
12/11/82	Journal photograph inserts	60.90
31/ 3/83	Telescope	198.38
		259.28
1 October 1983 to 30 September 1984		
12/10/83	Photographic competition costs	56.35
12/ 1/84	Stapler	207.58
12/ 1/84	Journal photograph inserts	59.80
4/ 7/84	Gunn general expenses	5.00
4/ 7/84	Photographic competition prizes	35.00
4/ 7/84	Duddingston Pond (Donation)	1,800.00
		2,163.73
1 October 1984 to 30 September 1985		
10/ 4/85	Photographic competition prizes	60.00
8/ 5/85	Photographic competition costs	64.45
8/ 5/85	Journal photograph inserts	63.25
8/ 5/85	Transactions - journal binding	47.00
		234.70

Since 1981 a Management Committee has conducted the requests and expenditure of the affairs of the Fund. The Committee has now completed its four years of office and a new Committee will be formed. Until the new Committee is elected please direct any suggestions or enquiries regarding the Fund to the Convener of the Bequest Committee, Mr Duncan Gill, 75 Priestfield Road, Edinburgh EH16 5JD, Tel. No. 031-667-2427.

THE GUNN PHOTOGRAPHIC COMPETITION - 1985

This competition is now in its third year. As 28 entries had been received in 1984 it was decided to broaden the competition and to offer prizes for both prints and slides. In the event, entries this year fell back to 18. The judge was Mr Gordon Finnie.

RESULTS

PRINT SECTION

1st	Alex Cleland "Arctic Terns Feeding Chicks"
2nd	Ena Gillespie "Small Pearl-bordered Fritillary"
3rd	Jackie Muscott "Ringlet Butterfly"

SLIDE SECTION

1st	Ena Gillespie "Puss Moth Caterpillar"
2nd	Alex Cleland "Pyrrhosoma Nymphula Ovipositing"
3rd	Karen Cleland "Fulmar Incubating Herring Gulls Eggs"

These photographs are reproduced on pages 5 and 6.

Gunn Photographic Competition 1985

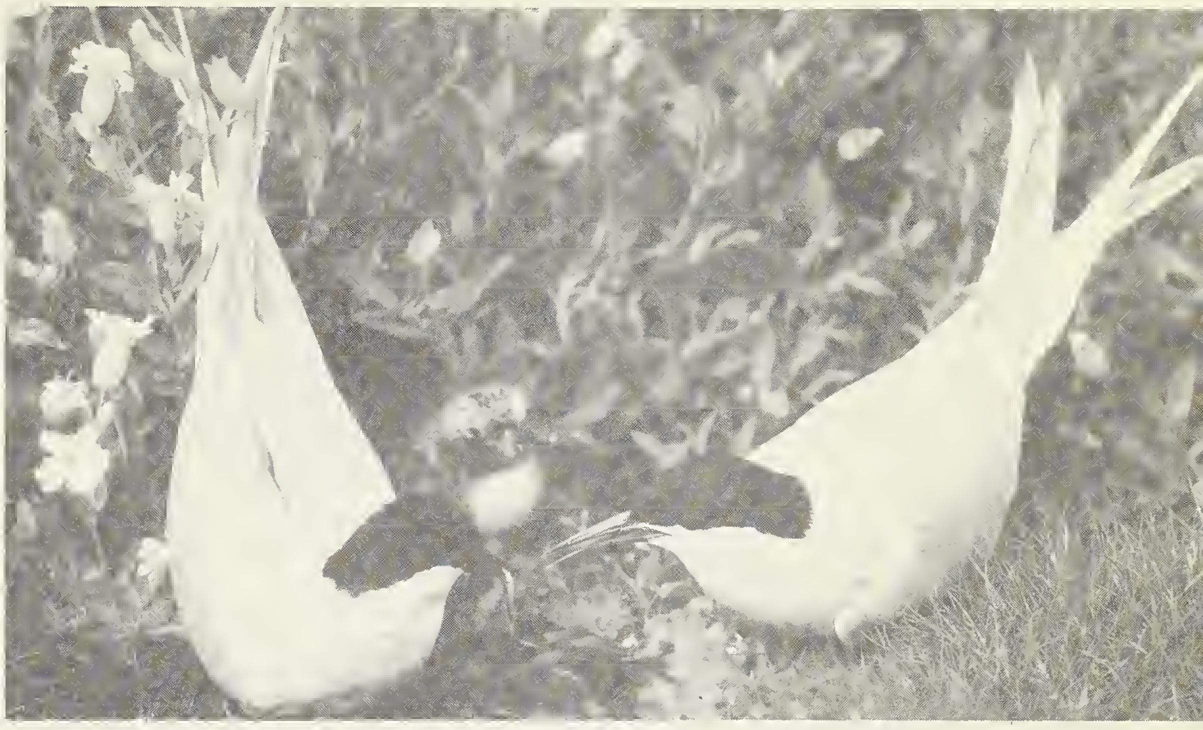
Print Entries

First Place

Arctic Terns Feeding Chicks

by

Alex T. Cleland
ARPS



Second Place

Small Pearl-Bordered Fritillary

by

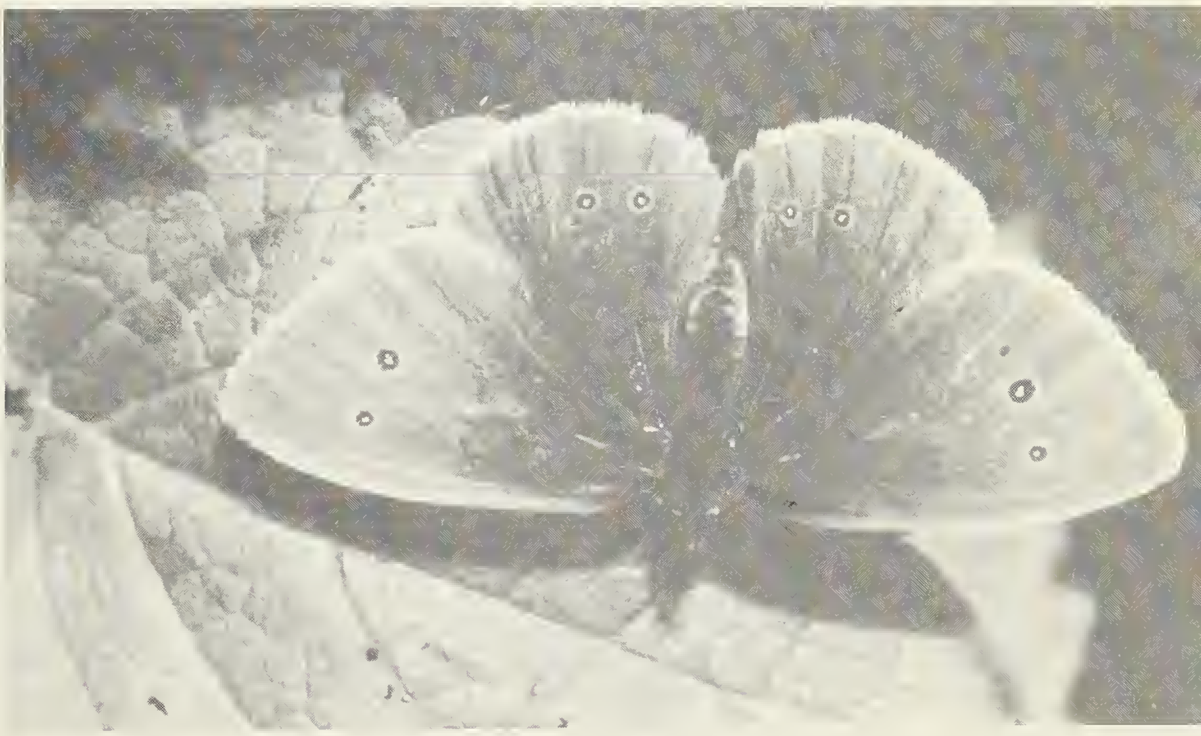
E. Gillespie

Third Place

Ringlet Butterfly

by

J. Muscott



Gunn Photographic Competition 1985

Slide Entries

First Place

Puss Moth Caterpillar

by

E. Gillespie

Second Place

Pyrrhosoma nymphula (ovipositing)

by

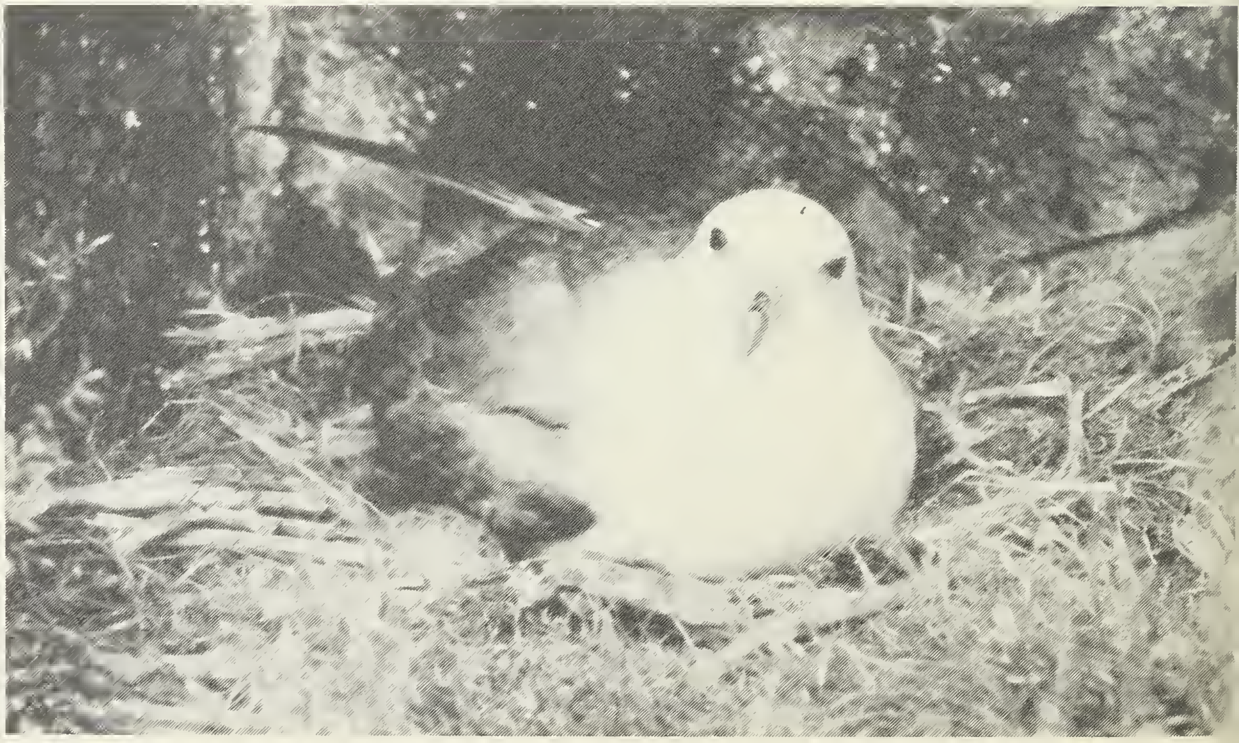
Alex T. Cleland
ARPS

Third Place

Fulmar Incubating Herring Gulls Eggs

by

Karen Cleland



WINTER INDOOR MEETINGS - 1985

January: Mr Duncan McEwan from the Paisley Colour Photographic Club showed slides from the 16th International Exhibition of Colour Slide Photography. Entries had been received from many countries for this Exhibition in Pictorial and Nature Sections and the standard of the entries was very high indeed.

February: Mr R.M. McBeath from the Royal Botanic Garden, Edinburgh, spoke on "Plants of the Pyrenees and Cantabrian Mountains".

Mr McBeath told us that his talk was based on three different visits when he studied, collected and photographed plants of the high mountain region. He showed beautiful slides taken on his travels and described the physical aspects of the terrain. In places the limestone hills were dissected by river valleys where chamois and birds of prey were to be seen. Agriculture, where it could exist was very primitive. The plants growing in the high altitudes were very dwarfed and although many of the species were similar to the ones we grow in our rock gardens their period of flowering was affected by the altitude and in some places daffodils could be seen flowering in August.

As he travelled further east conditions became much drier and the plants had to make suitable adaptations. However, there were forests of Scots pine and the Ordessa National Park was very interesting both from a botanical and recreational point of view.

Mr McBeath's close observation of plants and general features of this area aroused the keen interest of his listeners.

March: Mr S. Clarke's subject for the evening was "Flowers of the North West Pacific Coast". The area covered was the south of British Columbia and Alberta and the northern parts of Montana and Washington State. He had been joint leader of an expedition which also included the Selkirk and Purcell Mountains up to the Rockies. Most of the flowers shown were alpines or semi-alpines but also included were examples from the grassland areas and the semi-desert conditions which exist within the region.

Orchids and lilies were well represented and Mr Clarke explained that many of the species were named after the two Americans Lewis and Clarke who opened up the area on behalf of the American Government. Scottish botanists, e.g. Drummond, had also left their mark on the area.

As well as the slides of flowers we were also shown pictures of beaver lodges, painted turtles and small mammals found in the area, not forgetting the brown bear which he came across from time to time.

April: Members' Night. Short talks were given by five of our members and the variety of topics shows the wide interests covered by the Society.

Miss J. Muscott showed slides taken of plants on the lower slope of the volcanic peak in Teneriffe. Some of these plants were Canary pine, which is endemic to the Canary Islands, the dragon tree, a primitive species for which the Canaries are famous and local species of ragwort, sow thistle, purple spurge and scented jasmine.

Mrs E. Gillespie showed slides of bones found in an owl's pellet and gave an explanation of how to identify mice, shrews and voles by their teeth formation.

Mr Alistair McLeod showed slides of a range of plants taken by his daughter in Iceland.

Mrs E. Farquharson showed slides of fungi including the earth star (*Geastrum triplex*) found at Tyninghame and Greenbank Drive, Edinburgh. She also showed slides taken on three separate visits to St Kilda in widely contrasting weather conditions.

Mr D. Manson showed slides taken at the Reay Burn which is one mile west of Dounreay Atomic Reactor. This area has a profusion of colourful plants and we were treated to close-up views of these including the prize Primula Scotica.

Miss J. Raeburn showed a medley of bird and flower slides taken by the late Miss Mary Wood in a variety of locations.

On display at the meeting was the equipment owned by the Society and available for loan to members. This included a telescope, stereo-magnifiers, microscopes, a pH indicator and mammal traps.

Some of the Gasteromycete fungi collected during the past year were also on display.

October: Mr Rob Campbell who had spent sixteen years in Papua New Guinea gave an interesting talk, illustrated by slides, of that country. Throughout his lecture the meeting was impressed by the obvious love he had for the country, his understanding of its problems and his knowledge of the wild life there. He told us that the people are being greatly affected by outside influences and many have adapted easily though there are still primitive tribes which depend on natural resources and who live in mountainous areas inaccessible by road. Experiments were taking place to see what crops could be introduced to help the economy and it was found that one of these was cardamon which could be cultivated without spoiling the rain forests. The method of 'slash and burn' is used to clear the land for the planting of their staple crop, the sweet potato, but unfortunately this causes erosion.

Mr Campbell showed slides of colourful birds and flowers and also of some small animals, mostly nocturnal, and mentioned that no large mammals are to be found in Papua New Guinea.

November: "Pollination Mechanisms in Flowering Plants" was the subject chosen by Dr A.F. Dyer for his talk. Dr Dyer showed slides of wild and garden flowers and went on to say that almost every aspect of the flower was concerned with pollination. He explained the process which took place in the flower to produce the seed and how the plant prevented self-pollination, the usual agents being wind, water and animals. Most plants are pollinated by animals, the flower providing food and the animal transferring the pollen from flower to flower. Among the special devices used by the flower to attract the animals are colour and scent, and some vectors have a special relationship with certain plants. Bees, wasps, butterflies and moths all play their part in pollination and even slugs may help to pollinate the magnolia. In some parts of the world birds bring about pollination and bats and the pygmy opossum, a marsupial, also assist in the process. Some flowers may mimic, both in appearance and smell, the substance on which the animal lays its eggs, or, as in the case of some orchids, the flower may deceive the male of the species causing him to think that it is his mate.

Dr Dyer told us about his own observations of Trillium, an introduced plant to this country, which is pollinated by an ant but he noticed that the seed was removed by a wasp. This was an original observation but information is coming in to corroborate his finding. We were encouraged to make our own observations from nature.

December: The subject chosen by Mr J.L. Keppie for his talk was "Assorted Islands". He explained that the Islands that he would talk about were off the west coast of Scotland and he began with Rhum. This was an island of contrasts, he said, with lush growth and wet heathland. Deer fed on the grass and up to 70 thousand pairs of Shearwater nested in the mountains. Pictures of the interesting Kinloch Castle were shown with many of the rooms furnished exactly as they had been when the family lived there early this century and which was being preserved by the National Trust for Scotland.

From Rhum we went to Canna which, Mr Keppie said, was operated as a farm but where there were many relics of the past as well. The magnificent grandeur of Compass Hill and the stacks on the coast where shag and puffin abound were shown.

From Canna we crossed the Minch to St Kilda and we saw pictures of the rugged beauty of the sea and cliff scenery. The past was brought to life with pictures of the local inhabitants before the evacuation of the island took place and then present-day views of the restoration of the village by the National Trust. The old farm systems could be traced and the cleits, stone structures for the drying and storage of food, were scattered all over the hillsides.

Pictures of the St Kilda wren and fieldmouse were shown and also the Soay sheep and goats. Many sea birds live around the coast and this is an important nesting place for gannets, to mention just one of the species named.

S. Litteljohn

CONSERVATION AND RECREATION ON LOTHIAN RESERVOIRS

At long last there is to be a review of the interrelated conservation and recreation demands of Lothian reservoirs. This article gives some of the background to the problems and the matters that are now being considered by the Regional Council.

The growth of the population in the Lothians, and in Edinburgh in particular, through the 19th century, and the increasing demand for water to supply both the expanding settlements and the various river based industries that existed at the time, became the stimulus for the building of reservoirs within the hill valleys of the Pentlands, Moorfoots and Lammermuirs. Through the 20th century demand for fresh water has constantly outpaced the supply reserves and this has led to further reservoirs being built to meet this. Recently these have been outwith the regional area, the most notable being the construction of the Megget and its introduction to the supply system in 1984.

The construction of these freshwater bodies provided artificial habitats to be colonised by wildlife. Unfortunately, there are no known published reports of the pattern of natural colonisation of the reservoirs or the early importance they gained, in particular as habitat for waterfowl. But it can be considered that reservoirs such as Gladhouse, once filled, would have been originally relatively stable water bodies. As a consequence, they were probably of greater wildlife value than in more recent years, when demand and insufficient water inputs during the summer led to ecologically disastrous draw downs, as in the 1970s and early 1980s.

Where reservoirs are built in relatively shallow shelved valleys, such as Gladhouse, Threipmuir and Harperrig, a good water margin transition, from open water through marsh to dry land, would have developed as various species occupied the newly created niches. Many species were no doubt already growing along the banks of the feeder burns and thus quickly invaded the new shores, while others would have been dispersed into the sites through the aid of wind and animals, particularly visiting waterfowl. On the unencroached dry land, where woodlands were not planted, the semi-natural grasslands of the former farmland would have carried a high diversity of herbaceous species. Where grazing was withdrawn this habitat type would have been transformed by the dominance of the more coarse grass types, to the detriment of the finer, close growing species. Occasional residual vegetation areas of heather survive where, through chance, 'islands' have been created, while examples of orchids in unplanted areas may illustrate the species diversity of grassland that existed prior to agricultural improvements in the area.

Those reservoirs constructed in steep sided valleys, such as Glencorse and Torduff, provide little opportunity for vegetation establishment since even small drawdowns expose steep sided rock faces where colonisation is highly restricted. Even on the more shallow shelving at the top of the valley floor, draw down, even slight, can expose a wide band of mud in which the environmental transition is too dramatic for margin plants to survive.

Other than the planting of coniferous woodlands around the edge of some reservoirs, for reasons of amenity and shelter - as at Gladhouse and Harlaw, where Scots pine date from the building of the reservoirs, there has been little or no management of the ground on the reservoir edge. With the exception of Talla and Fruid very little of the catchment area is actually owned by the water authority for any reservoir. In all other cases only a small margin of land forms part of the reservoir complex. This may be fenced-off but at Whiteadder and West Water sheep grazing, which is the normal use for adjoining land, occurs right up to the water's edge.

Undoubtedly, the creation of new water bodies would have been an immediate attraction for waterfowl, their importance increasing as the vegetative sequences towards the stabilisation of water margin habitats developed and the feeding and cover values became enhanced by species diversity and vegetative structure. The detailed build up of numbers and waterfowl variety is unknown but the opportunities provided would have been exploited by both migratory and resident species. Not until influences of water draw down, and mink in more recent years, would there have been undue interference to natural populations of species other than through winter shooting and angling during the summer.

Angling and the sporting rights associated with each new water body featured in the titles of all reservoirs. Only in a limited number of cases were the rights conferred entirely to the water authority; they were otherwise either entirely retained by the former land owner(s) or held jointly in association with a fishery management agreement.

In all cases angling, as a recreational pursuit, no doubt existed to some degree as soon as the water bodies were created. In the early days, angling predominantly took place from boats, while from the shore it was neither fashionable nor encouraged. However, angling from the shore is now the most popular style of fishing and, over the years, it has been extended to those reservoirs where it is safe to do so.

The sporting rights are fixed in the title deeds and in many cases are reinforced by statutory provisions included in the relevant Water Orders or Acts of Parliament. These could only be changed by statutory amendment or through the agreement of the owner of these rights. In addition, it is well to record that the possible introduction of entirely new recreational activities is governed by the water authority in terms of its responsibilities for the supply of drinking water, and the owners of the sporting rights. The constraints on compensation reservoirs, in which the stored water is for river replenishment during the summer months, are less stringent in relation to the responsibilities of the water authority.

While angling has existed to varying degrees on all reservoirs according to agreed regulations, improvements in stocking, changes in boat numbers and their organisation, have gradually led to better use of the fisheries. In no case, however, have these improvements positively taken into account the wildlife values of the water bodies, with the exception of Gladhouse and Bavelaw where as part of their management as nature reserves certain modifications and constraints have been introduced. In each case these have been undertaken in isolation, to deal with the local management priorities and circumstances according to the wildlife/angling interaction as it has developed over the years. In no case have changes been made to starting and finishing dates of the angling season or the length of the day available for fishing.

Such opportunities may have considerable value, particularly in relation to the sensitive migratory periods for geese, but the prospect of introducing such subtle changes must be considered as part of an overall review of the conservation value of individual reservoirs, according to the pattern of use within geographical or bird movement groupings.

Lothian Regional Council is now undertaking a strategic review of the wildlife values of Lothian reservoirs, to assess the scope of such sympathetic management for the benefit of nature conservation, in association with existing recreational uses, and ultimately in association with the scope for further recreational multiple-use of these inland water bodies, as may be compatible within the restrictions imposed by the water authority and the solum owners.

The natural lochs in the Lothians are few in number and the majority, with the exception of Linlithgow, Duddingston and Pressmennan, are small. As a consequence, the wildlife value of the Region's reservoirs is very important. However, in meeting recreational demands conflict can arise between the interests of conservation and recreation, and without a positive approach to the problem wildlife would undoubtedly lose out. The development of an integrated plan to avoid this is long overdue and over the next few years it is anticipated that a plan can be devised which will both satisfy the various demands and also improve the conservation value of our reservoirs.

J.C. Sheldon
Regional Ecologist

STRATHFARRAR

A four day meeting was arranged by the Cryptogamic section of the Botanical Society of Edinburgh to collect in the Strathfarrar area and in particular in the Strathfarrar National Nature Reserve. The group of twelve represented interests in fungi, lichens, myxomycetes[1] and bryophytes[2]. Two of the group belonged to the ENHS.

The Reserve was formed in 1977 by arrangement with the estates of Culligran and Struy and occupies the lower part of the glen, while the upper part of Glen Strathfarrar is owned by the Lovat Estates. The pinewood in the Reserve is a remnant of the Old Caledonian Forest, and until recently regeneration had been very slow, but the NCC who manage the reserve are now fencing areas with a significant improvement in natural regeneration. As the meeting was held during the deer stalking season, access to higher ground was restricted.

The river systems in Strathfarrar, Strathglass, Glen Affric and Glen Cannich have all been harnessed by the North of Scotland Hydro-electric Board. Many will regret this, but the numerous power stations - two in Strathfarrar, both underground, at Deanie and Culligran, Fasnakyle at the entrance to Glen Affric, and Kilmorack and Aigas on the River Beauly - have provided much needed employment and have revitalised the area. (By 1946 the population in Cannich had fallen to 23.) Good roads are maintained up the glens and judging by the numbers of anglers seen, the area must be a fisherman's dream.

The first day was spent exploring Glen Strathfarrar as a whole. After driving to the upper end, each group then sampled likely areas, working their way steadily downriver. Fungi were collected from under pine, birch and alder, as well as from grassy stretches and from a gravelly area beside the river.

On the second day we were accompanied by the NCC warden, Mr Hugh Brown, and collecting was kept mainly to within the Reserve. Much of the morning was spent negotiating burns, scrambling up steep slopes, through thick heather and over huge boulders, pulling wellingtons out of bog and hunting for fungi whenever we weren't too pre-occupied with our own safety. Fungi were found mainly in the flatter areas and where the heather was less dominant, but the return in quantity was poor for the amount of effort that had been expended. However, we were rewarded with seeing pine marten droppings quite frequently.

Glen Affric was visited on the third day. Walking was vastly easier so one could enjoy the views. Collecting was confined to the pine forest within a mile or two of the top car park. Some had intended going up one of the mountains to look for high altitude species associated with Salix, but cloud did not lift until late morning which left insufficient time.

On the final day we were joined by members of Tain & District Field Club and the Inverness Botany Group. Dr Watling chose the woods surrounding Aigas House for the foray, fungi being plentiful there. After a morning of collecting everyone returned to the House, and the collections were laid out after lunch on a picnic table and Dr Watling then gave an explanatory commentary on the colourful and varied specimens that had been gathered.

E. Farquharson

[1] Myxomycetes - slime fungi.

[2] Bryophytes - the major group of non-flowering plants consisting of mosses and liverworts.

A ROTTEN WEEK AT KINDROGAN!

At the end of August a group of similarly minded people, including six ENHS members converged on Kindrogan Field Centre to study the fungi of the area under the tutelage of Dr Roy Watling.

The structure of the course was such that we spent the morning in the field collecting specimens and benefiting from "on the spot" descriptions (and often interesting background stories) from Dr Watling. We returned to the Centre to lay out our specimens, take off our boots and eat our packed lunches. We had strict instructions as to the order of priority for performance of these operations! After lunch we amassed typical examples of each species etc, on a central table and were given explanations about the identification, habitat and rarity of each one. We then returned to individual work using field guides, microscopes and various fungal identification keys. After our evening meal we returned to the laboratories and were given an illustrated lecture on some aspect of identification and classification. It was good to be able to retreat from everyday life and concentrate, without the usual pressure of conflicting demands on time, on the rotten world around us. The course was structured so that the maximum opportunity was afforded for learning, both for the relative beginner and for the more knowledgeable participants. We were strongly encouraged to refer to microscopic features before attempting a positive identification of any fungus.

However, some fungi are more easily notable by field characteristics than others and identification of these can be made more confidently, even without recourse to a microscope. *Lactarius torminosus* has a cap coloured like crushed strawberries and a beautiful inrolled frilly margin. *Hygrocybe psittacina*, which is green and turns yellow, can still be distinguished in its yellow state from other yellow hygrophori because it remains green at the top of the stem. Both *Russula albonigra* and *Russula nigricans* change from white to black but the latter has very wide gills and goes through an intermediate red colour change. We were encouraged to use our noses and find the smell of bed bugs (!) in *Lactarius quietus*, of geraniums in *Russula fellea*, and of crab-paste in *Russula xerampelina*. We smelt aniseed in *Clitocybe odora*, cheap soap in *Tricholoma saponaceum* and cheap scent in *Tricholoma lascivum*. *Lactarius glyciosmus* has the distinct smell of coconut.

One genus, *Cortinarius*, tended to be strangely accident-prone. It was dropped down banks, stood on, fell in puddles and met with other similar disasters. On the occasions when a specimen survived it was fortunately often in too advanced a state of decay for identification - what a relief! Despite these comments many were identified and were of great interest. We began to appreciate the importance of checking which of the possible combinations of dry/wet cap and dry/wet stem were displayed in each specimen. *Cortinarius alboviolaceus* appears to have white "lead paint" on the cap. *Cortinarius tabularis*, unlike *Cortinarius decoloratus*, does not have a sticky cap. *Cortinarius pseudosalor* is sticky all over.

The birch polypore, *Piptoporus betulinus*, is used in the mounting of insects due to its capacity for moisture absorption. *Fomes fomentarius* can be used to make decorative caps and aprons. *Chlorosplenium aeruginascens* with its amazing green fruit bodies was found in a wood near Pitlochry and brought back to Edinburgh. This fungus causes the wood to turn green. In past years such wood was used in the making of Tunbridge ware. A birch wood with growths of *Piptoporus betulinus* and *Inonotus obliquus*, a black growth which is used in the treatment of cancer, could perhaps be a profitable investment. Underneath the birches encouragement could be given to the growth of a carpet of chanterelles, *Cantharellus cibarius*, thus providing a suitable edible delicacy.

We noted the bleached leaves round the sites of *Marasmius peronatus*, the common wood woolly-foot. The bleaching is caused by the fungus using the lignin from the leaves. Many of us began to appreciate more fully the importance of noting habitat, in particular which trees the fungus was growing on or near. On a visit to a pine wood we found *Rozites caperata*, the chicken of the woods, and also several different *Suillus*. There was *Suillus flavidus* under Scots pine in a wet swampy area, *Suillus luteus* with the distinctive ring on the stem and *Suillus bovinus* with olivaceous pores. We also found *Suillus grevillei* under larch.

Rarities were pounced on, displayed with glee, photographed and then packed away carefully in waxed paper for later careful checking and analysis. *Melastiza scotica* was found under Scots pine and two of our number looked at each other oddly as they remembered the piece of orange fungus they had found elsewhere but carelessly disposed of, convinced that it was only ordinary orange-peel fungus, *Aleuria aurantia*. *Bankera fuligineo-alba*, a toothed fungus similar to *Hydnum repandun*, was gathered to be dried and sniffed at leisure by the lucky ones who could look forward to many happy hours with the smell of fenugreek. A find of the black fruiting bodies of *Cordyceps ophioglossoides* resulted in many people on their knees digging for the Elaphomyces "truffle" on which it grows as a parasite. The pale *Cystoderma carcharias* was found on a bank near a birch wood. *Tricholomopsis decora*, similar in structure to the common *Tricholomopsis rutilans* but deep yellow in colour throughout, was also recorded.

We were entertained by the horror story of the tasting of *Nolanea staurospora* which went wrong. Tales were also told of the different mycologists and their finds. One day as we sat around the table to record and discuss our finds a stinkhorn, *Phallus impudicus*, which had been left to "ripen" over a glass of water, started to break through the sheath. We watched it emerge and the tissues swell as they filled with water. The cap began to crack finely and the mucus oozed out and the distinctive smell began to permeate the room. About half an hour had been sufficient for the fungus to reach maturity from the "egg" shape.

With our microscopes we were encouraged to look for the horned cystidia of *Pluteus cervinus*. Four course members were found in the laboratories at 1 am looking for marginal cystidia on *Mycena galericulata*. The structure of the cap and the gills was studied as was the colour, the shape and size of the spores. Advice was given on the use of chemicals for staining and testing. It was also useful to see such a wide range of books and keys.

The course ended with a day outing to Glenshee and the Linn of Dee. At the Linn of Dee we found *Armillaria borealis* in wonderful profusion. It was first found there in 1981 and identified by Dr Watling. After a picnic lunch eight people toiled to the heights above the ski-tow and scrambled over the boulder scree in chilling rain and mist to record the fungi growing there among the old willow tree growth. We found small *Cystoderma amianthinum* and *Russula pascua*. We also found *Omphalina luteolilacina* which is the perfect state of a lichen and we heard of the man who, not surprisingly, had little success in his attempts to culture the lichen. Whenever he found the fungus with the lichen he pulled the fungus off and threw it away so as not to contaminate his experiment! We also found *Psilocybe semilanceata* - but who would literally go to those heights to collect it?

The week ended with our very sincere thanks to Dr Watling for his tuition throughout the many hours of the six days. The last fungus studied was that of the effects of yeast - in the local public house!

E. Smith

AUTUMN BIRDS AT KINDROGAN - 19-24 OCTOBER

Saturday, 19 October

Heavy white frost lay on the grass, the air was chilly but clear and the sun was shining from a blue sky on this crisp autumn morning. A Mistle Thrush flew across the lawn giving its flight call, a rattling sound. A number of these thrushes are continental migrants, returning to Britain for the winter and feeding on hawthorn, rowan and holly berries. Robin and Blackbird were singing, and a Wren was trilling and foraging for insects in the low vegetation near the walled garden.

In woods beside the River Ardle in the grounds of the Field Centre, we saw Chaffinch, Great Tit and Blue Tit. We listened to a rather plaintive persistent call, two notes then one note - a group of birds were hiding in the trees - four birds flew out and were identified by their lovely rose-red underparts, black cap and chin, as Bullfinches. The Dunnock's single note drew our attention and we found the bird with grey head and pinkish chest colouring. In the river near the stone bridge we watched a Dipper and a Heron flew overhead. Warblers, Swifts and Swallows were not found, most having left by August for the warmer climate of Africa.

We then set out for the Loch of the Lowes to look for Greylag Geese and study "Autumn Birds". Crossing the expanse of Moulin Moor en route, Red Grouse flew out of the heather, calling "go back, go back". A few settled on the grass and we could see their white feathered legs. Further on we stopped to watch seven Black Grouse (males) on a grassy mound. They flew around and displayed for us their white wing bars and lyre shaped tails.

On the Loch of the Lowes we could hear the sound of geese and as the morning mist cleared from the end of the loch they came into view. Greylag had settled on the water. Hundreds of geese were whiffling down from the sky, deflecting the air from their wings as they twisted and dropped. The white/grey seen in the fore wings as they descended was a distinguishing feature. It is a thrilling sight to watch huge skeins of geese flying in chevrons on extended lines and hear the loud nasal gabbling (a farmyard sound), as they approach and to hear the swish of air through the many wings as they fly overhead. The birds must have spent many hours in flight and travelled great distances from Spitsbergen and Norway. The short northern summers with quick growing vegetation sustain the geese through their breeding season. The change in the length of daylight hours triggers off migration. The geese follow traditional flypaths. They will come down if they meet a front of bad weather and continue their journey when the weather improves. The impulses which drive birds to undertake these long journeys are still largely unknown. They arrive in October/November and stay until April, feeding in agricultural areas on barley and oat stubble. They assemble in late afternoon on lochs and estuaries. One Barnacle Goose, with black head and neck and white face, was noticed among the Greylag.

On the loch were seen Great Crested Grebe, Pochard, Wigeon, female Goldeneye, Tufted Duck, Mallard and Black-headed Gull in winter colouring.

Sunday, 20 October

The day was spent in Glen Tilt. Intermittent groups of twenty to thirty large and smaller birds flew through the Glen towards us from the east. The smaller birds were invariably calling in flight a high trill "seeigh, seeigh".

The large birds were making a harsh "clak clak clak, see see" call and wagging their black tails. We identified these birds as Redwing and Fieldfare - migrating birds from Scandinavia and Baltic States. Small flights of migrating Mistle Thrush were also arriving. A Tree Creeper and Great Tit were in trees by the river. A Dipper perched on a stone in the fast flowing river was singing. It then floated head down and wings outstretched travelling along the stream bed and disappeared beneath the surface in search of food. A Heron was flying at high altitude in the mist over the hills.

Monday, 21 October

In larch woods near Birnam we looked for Capercaillie which had been seen there in previous years. One flew through the perimeter of the wood but we did not have a close sight of this elusive bird.

At Kirkell Bridge on a pond in a rushy field we saw 18 Teal and in a neighbouring field 3 Oystercatcher, 6 Lapwing and 7 Curlew. While we watched about 50 more Curlew arrived and settled in the field beside the others. Two Skylark were singing overhead.

We drove around Strathearn in search of geese. We had heard them call in the distance. We travelled on through the attractive village of Huntingtower and joined the A9 motorway outside Perth. A mile off the motorway to the east, we found a group of about 200 Pink-footed Geese, in a field beside a farm. We had close views of their round dark heads and necks, small pink and black bills, light beige bodies white underneath, and pink feet. They are smaller than the Greylag and have a high pitched "wink, wink" call. They come to Britain from Iceland and Greenland to winter here. The populations from Spitsbergen winter in the Low Countries on the mainland of Europe.

In a conifer wood on our left, 6 Chaffinches (male and female) were flitting about, also a Tree Creeper, Coal Tit and Goldcrest - the smallest British bird. It makes a "zi-zi-zi" call and flicks its wings while feeding.

Tuesday, 22 October

On this frosty morning our party were out before breakfast to see a Peregrine Falcon perched on a bare branch high up on the crags on the hill beside the Field Centre. After breakfast we drove to Glenshee and Cairnwell. We climbed up Carn Aosda (3003 ft) and one of our party walked about the mountain top looking for Ptarmigan. Fourteen birds arose and flew a short distance, then settled among the white granite rocks. They are the only British birds to turn white in winter and living at high altitudes they feed on lichens, crowberry and short heather.

In the late afternoon we stopped at little Loch Drumore. Four Whooper Swans were on the loch. They were identified by their stiffly held necks and lemon yellow base of black bills which taper to a point. One adult pair had four cygnets, still grey-coloured with dull pinkish bills. Coot, Mallard, Pochard and Wigeon were also seen. The high whistling sound of the male Wigeon was heard across the loch. Two Little Grebes were diving among the reed beds.

Wednesday, 23 October

We searched for Crossbills and Crested Tits in the native Scots pine woodlands at Loch an'Eilean. We saw Coal Tits and Goldcrest in the pines. Other parts of the wood were quiet. A small number of Crossbills flew above the conifers and out of sight. Later on, we were delighted to find a Crested Tit - the rarest of the British tits. We enjoyed a close view of the bird with its unique pointed black and white crest. Crested Tits like mature Scots pine forests with open areas of heather, as found in the Spey Valley.

On an open stretch of heather we sat and watched two buzzards soaring high above the hills. We observed how they curve primaries upwards to give lift on thermals. They soar on thermals and glide to the next thermal. That is the way they migrate. Two more buzzards circled about and we could see the light coloured feathers under the wings.

Thursday, 24 October

On the last day of our course we travelled to the Montrose area to study wildfowl, waders and sea birds. At the South Esk Estuary at Ferryden we enjoyed a close view of a large raft of male and female Eider Duck. We also saw Guillemots in winter plumage with young, Shag and young, Oystercatchers and two pairs of Mute Swans with four cygnets each.

At the Wigeon Hide Reserve of the Montrose Basin we climbed up the stairway to the viewing room, looking out over the Estuary and Basin. This area provides rich winter feeding for large numbers of wildfowl and waders, the wigeon being there in particularly large numbers. Numerous Eider Duck and a small number of Shelduck were seen. We came to the hide at low tide to have closer views of waders as they came inshore with the rising water. It was interesting to observe that the various species formed into their own groups to feed on the invertebrates. Wintering waders were numerous and we watched their feeding habits with their bills adapted to their particular feeding style.

It was an interesting and enjoyable course and we learnt much from our tutor, Nick Mutch. By listening for a bird's flight call, warning call or song he was able to trace and identify birds. He advised us to listen first for the song of a bird. Next to look at the shape of the head, bill and tail; then to observe characteristic behaviour. Birds can be found in habitats they like which provide suitable food supply. A study of birds' feeding habits is a guide to knowing where to find them.

In the evenings we looked at slides and studied birds and their habitats in more detail. We listened to the recording of bird song; we recalled and selected the bird songs we had heard during our various enjoyable outings.

E. O'Donnell

CRESTED NEWT SURVEY

A friend in Aberdeen neatly "passed the buck" when approached by the organiser of the survey by saying, "Oh, Betty Smith knows a lot of ponds in Scotland". On the basis of that improbable, not a little exaggerated and quite misleading remark we found ourselves roped in to help. The survey was organised, on behalf of the Nature Conservancy Council, by Mark Nicholson of the School of Life Sciences in Leicester Polytechnic. The objects were (1) to determine the national distribution of this species of newt; (2) to gain some idea of population; (3) to identify threats to habitat; and (4) to locate ponds without these newts that might be suitable for colonisation from threatened sites. All of this information is required so that a conservation policy for the species may be worked out.

By virtue of the Wildlife and Countryside Act 1981, the Crested Newt is now a protected species but many of its former breeding ponds have vanished. Several in the Edinburgh area recorded by Evans (1894) have gone in the last 40 years or so. About 50 ponds of the "Old Shafts" by Seafield, West Lothian were infilled only four years ago (Boyd, 1981).

To carry out a survey of a pond a minimum of two visits is required. The first and obvious method is to visit the pond in spring, in daylight, during mild weather and look for newts both in the water and under stones nearby. A sketch of the pond is made and its aquatic vegetation mapped in. A simple identification diagram and a bit of practice suffices to supply the needed expertise to distinguish the different species of adults one might expect to encounter, namely the Crested or Warty Newt, the Smooth or Common Newt and the Palmate Newt. The trouble is finding them. You'll be lucky to see any!

The second visit involves a recommended technique which was quite a revelation to us in more ways than one. You get a torch and, just after dark, quietly approach the pond, shine the light down on the water, walk round the pond allowing about 5 minutes for 50 metres and identify and count all the amphibians seen. Apparently the newts tend to swim out after dark from the cover of the aquatic vegetation and lie in the water above areas of sand or mud, bare of vegetation, where they remain more or less motionless unless disturbed. One should then be able to see and identify them with ease or so the detailed instructions informed us. We assimilated this information with the proverbial pinch of salt but were prepared to give it a try.

On our chosen night we stumbled down to the water's edge after dark. There, clearly visible in the torchlight, was a Crested Newt and there was another one and over there was a Palmate Newt. Excitedly, we started counting. We couldn't believe it! Not only were the newts easy to see lying in the shallow water over bare mud but they were very easy to identify. The biggest species, the Crested Newt is mainly black. The breeding male has a large jagged crest from the back of the head to the base of the tail which is broad and has a pale stripe running lengthwise through it. The Smooth Newt is middle sized and fawn coloured. The male has a wavy crest from the back of the head to the tip of the tail. The palmate Newt is the smallest of our newts. The hind feet of the breeding male have prominent black webs between the toes. In all we totalled 70 Crested Newts, 42 Smooth Newts and 6 Palmate Newts in 1½ hours of observation at that pond and in addition we noted a couple of Toads calling.

It wasn't difficult to recruit volunteers from our Society's members. To each, where possible, we allocated a site where Crested Newts had previously been recorded. Information was obtained from the details used in the compilation of the Scottish Wildlife Trust's booklet, *Ponds in the Lothians*, published in 1978.

The newt-hunters set to with a will that wasn't always justly rewarded. One found that his pond, previously recorded as a Crested Newt site, was a muddy puddle under a dripping tap! Even more surprising, there were newts in the mud but not Crested Newts. Another met with an "'allo, 'allo" from the local bobby checking on this suspicious character flashing a torch around a pond at dead of night. One unfortunate found a bull in the field effectively putting his pond "out of bounds". We started rather late in the season and then the rains came. Flooding became a hazard, in some cases preventing access to a pond. Some ponds couldn't be tackled at all after dark because of particularly difficult terrain. One of the success stories involved school-children in the daytime visit, a ploy they thoroughly enjoyed.

Our pond was a typical "horse-pond". Grazing horses kept the inshore water clear of vegetation. It was far more difficult to see newts in ponds that were well vegetated and not grazed. Such ponds would be easier to survey early in the season before the vegetation obscured the surface.

By sheer bad luck we hadn't got wind of the survey until the spring of 1985 and it turns out that this was the final year of the three year scheme as organised by Mark Nicholson. However so little recent work has been done throughout Scotland that any more information we can provide will be more than welcome. Most of our team are keen to carry on next year and we will be delighted if anyone else would like to join in. Information from any other part of Scotland would be most helpful.

Elizabeth Smith

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WEEDS

Some of your best friends are weeds. Sometimes, however, they are capable of behaving in most atypical fashion, especially when they find themselves in strange company. In fact they can behave in such a way that you might prefer not even to recognise them.

An example is the Field Pansy (*Viola arvensis*) described as a low/short plant. But when growing amongst, for example, a crop of winter barley, it is capable of growing up to four feet tall, and robust with it. The reason for this prolificacy arises from the success of farm herbicides in removing from field crops many of the more common arable weeds such as Charlock (*Sinapsis arvensis*), Common Poppy (*Papaver rhoeas*) and Fat-hen (*Chenopodium album*). The absence of these means more room to be exploited by other weeds and so pansy has moved from an insignificant position into a major weed role. As well as this lack of competition it responds to being well supplied with fertiliser and shows considerable aggressiveness in its bid to grab its share of the daylight, air space and moisture within a cereal crop.

Other plants react similarly. Somewhat less aggressive, the Field Forget-me-not (*Myosotis arvensis*), also described as a low/short plant, is capable of reaching over three feet in height in order to get its flowers into the sunlight.

Cleavers (*Galium aparine*) is super aggressive. Alternately known as Jack-run-the-hedge it can often be seen reaching ten feet or higher on the side of a hedge. It might equally be called Willie-run-the-wheat or Bob-run-the-barley, as if given the chance it uses such cereals as supports. The resulting mass of entwined growth makes crop canopy top heavy and this can cause the crop to collapse before it is ripe and makes harvesting of such areas difficult.

Common Chickweed (*Stellaria media*) is another weed of this type which germinates in the autumn and if not controlled by herbicide whilst in the seedling stage, soon becomes tough and hardened and able to resist any later chemical warfare aimed at it. Its ability to grow at low temperatures enables it to steal a proportion of the fertiliser applied for the benefit of the cereal. At least it has the saving grace that it senesces during the summer and so presents less of a problem at harvest.

Grass is also a weed. Different species are able to exploit different agricultural practices. Rough Meadow-grass (*Poa trivialis*) can grow readily in a wheat crop. Modern wheat varieties are quite short and so ample daylight reaches down to the ground to allow Poa to grow. Apart from absorbing part of the crop's food supply, its stems become quite wiry when mature and this can lead to crop cutting problems.

The last few years have seen a marked increase in the proportion of our grain crops sown in the autumn. Over this same period Barren Brome (*Bromus sterilis*) has moved from being merely a hedgerow grass and has begun to invade arable fields, at first near to the edge but gradually further and further into the fields. Autumn sown cereals allow Barren Brome to complete its annual growth and shed its seeds before the crops are harvested. Being an autumn germinator, spring cultivation for sowing spring cereals would prevent this from happening.

Couch grass is a term which usually refers to *Agropyron repens* but also covers Creeping Bent (*Agrostis stolonifera*) and Onion Couch - False Oat-grass (*Arrhenatherum elatius*). These perennial grasses have been arable weeds since the start of cultivation. Control used to be by dragging the rhizomes or stolons to the surface and then burning. Chemical control was often difficult as the situation required the selective control of these graminaceous weeds within a graminaceous (cereal) crop. The approach was to wait until after harvest. If autumn weather allowed the couch grass to regrow sufficiently it could then be treated with a herbicide which could become translocated to the rhizomes and prevent further growth. Scottish autumns do not always permit this method. An alternative method is to treat the crop plus couch grass just prior to harvest. The cereal is then ripening whereas the couch is still growing actively and so able to absorb the chemical. Fortuitously the side effects are to desiccate any other green weed material or late cereal plants and so make for an easier and drier harvest.

Black-grass (*Alopecurus myosuroides*) has a similar life cycle to Barren Brome and is a widespread weed of arable fields in the southern half of UK. Reports of infected fields indicate that it is gradually moving north. There have been occasional reports of its presence in Scotland but so far it is not established here. Any positive sightings of Black-grass should if possible be notified as although control measures are available, they are expensive and it is a case of prevention being preferable to the cure.

W.D. Gill

NOTES ON NATURAL HISTORY

Some 1984 observations

28. 9.84 Peregrine Falcon seen at Hopetoun House, North Deer Park. *(C.R.)*

9.12.84 A flock of over 30 Crossbills on a large tree in Elibank Forest, near Innerleithen. Young birds were still in yellow and orange plumage. Many more Crossbills heard in the dense trees suggesting a population explosion. *(G.M.)*

26.12.84 A dead Bar-tailed Godwit was found on the beach, west of Gullane. It was taken for examination and found to be a male, very thin, weighing 170 grammes. One breeding feather remained on the rump. The primary feathers were very short and the secondaries were ragged. Obviously it had had a poor summer: it was not a young bird, and probably died of starvation and the cold night. *(M.R.)*

29.12.84 Fox seen in garden at 9.30 am at 75 Priestfield Road - the first in 29 years. *(B.G.)*

Observations in 1985

Jan 1985 There were some unusual weather conditions. During the first week one foot of snow fell in Kent. On 6 January eight inches of snow was recorded in Nice, and Rome had its first snow for 14 years, while Switzerland reported its coldest weather for 14 years. In Finland it was the coldest weather (-50°C) for 100 years. Greenland was warmer than the south of France. One day St Kilda was the warmest place in the UK. On 26 January it was -12°C at Turnhouse with hard frost and snow on the ground. Edinburgh's cold spell lasted into February, but Edinburgh missed three heavy falls of snow, two in England and one in the north of Scotland. So the Lothians was not a bad place to be. *(M.R.)*

20. 1.85 A Fox in the snow near to the top of Largo Law. *(G.M.)*

23. 1.85 A Kingfisher at the old quarry on the River Almond at Cramond. The bird remained in the area all winter. *(M.M., E.R., M.R.)*

26. 1.85 Two Fieldfare and two Redwing feeding on cotoneaster berries in a Blackhall garden. *(M.R.)*

1. 2.85 Blackcap, a wintering hen, at Hopetoun House. *(C.R.)*

16. 2.85 All ponds frozen - skating on Linlithgow Loch. The Great Crested Grebes have moved to the Forth Estuary. *(M.R.)*

19. 2.85 Red-breasted Merganser on the Water of Leith, on the stretch between Roseburn and Belford. *(C.R., M.R.)*

25. 2.85 130 Whooper Swans at Crayling, near Kelso. *(C.S.)*

27. 2.85 A Siskin on a bird table on the north side of the city. *(C.S.)*

7. 3.85 Frog spawn in Cardrona Forest, near Peebles - in a puddle. *(C.S.)*

10. 3.85 113 Seven-spot and one Eleven-spot Ladybird on top of a hedge in the sunshine; Honey Bees on crocus flowers; a Small Tortoiseshell butterfly on the aubretia. *(M.R.)*

Mountain Hare still totally white in winter coat above Boghall Farm. *(E.F.)*

11. 3.85 Two large skeins of geese (Greylag) flying north west. Temperature was 6.6°C (44°F); it was sunny and the wind was south west. Spring migration beginning. *(M.R.)*

17. 3.85 Male Hen Harrier on Craigengar, Pentlands. *(G.M.)*

21. 3.85 Last year's fruit bodies of *Geastrum fornicatum* found at Yellowcraig. *(E.F.)*

2. 4.85 Nine Snow Bunting near the snow-capped summit of Ben Dearg (3307 ft) (this Ben Dearg is the one north west of Blair Atholl). Ptarmigan were also seen. Hundreds of Red Deer on the lower ground towards the Rivert Tilt. *(G.M.)*

7. 4.85 A Woodpecker heard drumming from Corstorphine Woods. *(E.R., M.R.)*

12. 4.85 The first Swallow seen at Hopetoun. *(J.C., I.M., M.R., C.R.)*

14. 4.85 Two Sparrowhawks near nest site in Davidson's Mains Park. One Sparrowhawk with kill on top of privet hedge. *(E.S.)*

20. 4.85 A Willow Warbler seen and heard at the Marl Loch, Aberlady. *(M.R.)*

30. 4.85 Chiff-chaff heard at Hopetoun. *(M.R.)*

5. 5.85 Adder on southern slope of Dirrington Great Law (near Longformacus, Berwickshire). The day was cold and the reptile made little effort to escape. *(G.M.)*

16. 5.85 Sparrowhawk seen at Boghall Farm, Pentland Hills. *(C.R.)*

19. 5.85 Lamprey (*Lampetra* sp) seen in a small burn running into the River Garry at Blair Atholl. *(C.R.)*

23. 5.85 While climbing over a rocky headland at Camas Deanna, west of Plockton, we saw a Great Northern Diver swimming quietly about 20 yards away. *(S.G., C.S.)*

25. 5.85 Two Green Hairstreak butterflies on juniper at Balnaguard (Perthshire) on the group outing; a Woodpecker nesting hole found in fallen birch tree trunk. The tree had been killed by *Fomes fomentarius* (Hoof Fungus) and blown down before nesting began. Mick Rebane, our leader, was pleased to have the nest for his exhibition room. *(M.R.)*

26. 5.85 A beautiful male Yellow Wagtail feeding on kelp flies on the strand line at Yellowcraig; *Saxifraga tridactylites* (Rue-leaved Saxifrage) found near the barbecue pit. *(M.R.)*

5. 6.85 *Laetiporus sulphureus* on oak tree on Corstorphine Hill. *(E.S.)*

7. 6.85 Watched a male Otter from a distance of 6 feet finishing his evening meal, north west Skye. *(C.C.)*

13. 6.85 A male Orange-tip butterfly landed at our feet at Boghall Farm. *(E.G., C.R.)*

16. 6.85 Adder on the hills south of Birnam, near Dunkeld - disappeared quickly into the heather. *(G.M.)*

Goosander and brood of 10 by the Braan River up from the Hermitage, near Dunkeld. The mother quietly led the ducklings into the water. Once afloat the family shot away at great speed. *(G.M.)*

18. 6.85 A Pine Marten ran across the road in a wooded part of the area between Coylumbridge and Feshiebridge about 20 yards in front of the car. Its cream-coloured 'bib' and long bushy tail were very distinctive. *(J.R.)*

29. 6.85 Small Pearl-bordered Fritillary seen in the Carron Valley, near Denny, Stirlingshire. *(W.G.)*

July/August Regular appearance of Broad-leaved Helleborine (*Epipactis helleborine*) through asphalt in suburban driveway, Barnton.

Regular appearance of Upland Enchanter's Nightshade (*Circaea intermedia*) in suburban garden, Barnton. Confirmed by Royal Botanic Garden. *(E.S.)*

July/August/Sept July and August were the wettest since 1879. With June a rainfall of 14.26 inches was recorded.

Between Friday, 20 September and Monday, 23 September, Edinburgh was drenched with 3.3 inches of rain. The monthly average is 0.9 inches.

Heavy rain flattened the harvest fields and ruined the crop. *(M.R.)*

1. 7.85 Male and female Little Grebe were seen with 2 pulli on the ornamental pond in the Royal Botanic Garden where they had bred. *(C.R.)*

1. 7.85 At about 3 pm I spotted a Chequered Skipper butterfly (*Carterocephalus palaemon*) on some heather in a lay-by near Glenfinnan. I returned on the next two consecutive days at approximately the same time but it was not sighted again. *(K.C.)*

19. 7.85 Ten specimens of Scarlet Pimpernel (*Anagallis arvensis*) growing on the edge of a barley field at Jedburgh. *(H.T.)*

21. 7.85 Kingfisher flew up the Tyne near the bridge at Haddington: later it flew down the river and took a fish from the water. It was again sighted on the Tyne at Haddington on 11 August. *(N.F.)*

23. 7.85 Two specimens of the Garden Tiger moth were present in a greenhouse at Hopetoun. *(C.R.)*

28. 7.85 A Dark Green Fritillary butterfly at Tyninghame (on SWT outing with Alastair Somerville). *(M.R.)*

30. 7.85 Two Tree Creepers on pink cherry tree in Barnton area. *(E.S.)*

3. 8.85	On the Carlops group outing a Peregrine Falcon was seen chasing starlings.	*(M.R.)*
5. 8.85	At Aberlady Bay, *Rhodocybe popinalis* found in the dunes (confirmed by Dr Roy Watling).	*(E.F.)*
8. 8.85	Mink (*Mustela vison*), a pure black specimen (but for a white fringe of hairs under the lower lip) was seen on the Gala Water, in mid afternoon, near the Watherstone, Galabank Railway Bridge.	*(E.G., G.R., M.R.)*
9. 8.85-	Kilmelfort area of Strathclyde Region - numerous Scotch Argus and Heath Fritillary butterflies; Golden-ringed dragonfly (*Cordulagaster boltonii*); Pale Butterwort (*Pinguicula lusitanica*); Otter swimming in Loch Melfort.	*(C.C,S.C.)*
13. 8.85	Under Hornbeam in Greenbank Drive, *Lactarius circellatus*.	*(E.F.)*
17. 8.85	Two Dark Green Fritillary seen at Oldhamstocks, near Cockburnspath.	*(W.G.)*
	Young fox cub, regular visitor to garden (Barnton), stretched up tree to investigate bird feeder.	*(E.S.)*
20. 8.85	Elephant Hawk moth caterpillar on Great Willowherb at Hopetoun Round pond.	*(M.R.)*
21. 8.85	Dog Stinkhorn (*Mutinus caninus*) found at Tyninghame under trees near shore.	*(E.F.)*
29. 8.85	Peregrine Falcon seen at Boghall Farm on the Pentland Hills.	*(C.R.)*
31. 8.85	Two Puss moth caterpillars found on a young Aspen at Vogrie Country Park.	*(M.R.)*
5. 9.85	At least 20 *Geastrum triplex* in Greenbank Drive.	*(E.F.)*
6. 9.85	*Lactarius pubescens* (unconfirmed) under young birch at Saughton.	*(E.S.)*
7. 9.85	On the Peffer Burn, east of the timber bridge, Aberlady Bay Nature Reserve: Common Sandpiper, Greenshank, Curlew Sandpiper, one of each.	*(C.R.)*
8. 9.85	Wheatear - one near Craigie Wood, on the back road from Kirkliston to the A90.	*(C.R.)*
10. 9.85	Several Dog Stinkhorns (*Mutinus caninus*) seen at Yellowcraig.	*(E.F.)*
15. 9.85	*Gomphidius roseus* found in the pine woods in Glen Affric.	*(ENHS weekend)*
19. 9.85	A male Whitethroat at Barns Ness.	*(C.R.,M.R.)*
20. 9.85	*Lactarius brittanicus* found in Greenbank Drive.	*(E.F.)*
22. 9.85	*Clinopodium vulgare* - Wild Basil in Blackford Quarry. "The Field-Club Flora of the Lothians" shows that the plant was thought to be extinct in the quarry when the flora was published in 1934.	*(G.M.)*

25. 9.85 One Blackcock disturbed from Castle Greg, Roman Camp, on the B7006 between the A70 and West Calder. *(C.R.)*

27. 9.85 An Arctic Skua pursuing Sandwich Terns at Gullane Point. *(E.R.,M.R.)*

29. 9.85 Four Roe Deer, Red Squirrel, six Jays and three Capercaillie seen in Craigvinean Forest, Dunkeld.

Out on the neighbouring moor, Black Grouse, Red Grouse, a Fox, two Lizards and two Emperor moth caterpillars were seen. Three Goshawks rose from Loch Skiach. *(G.M.)*

5.10.85 Kingfisher flying up the River Tyne at Haddington (see 21.7.85 and 11.8.85). *(C.C.,S.C.)*

7.10.85 At 10 am a Painted Lady butterfly (*Vanessa cardui*) - a very pale specimen - was seen for the first time in the garden at 75 Priestfield Road. It rested in the sunshine on the garage wall before flying off. *(B.G.)*

11.10.85 Red Admiral butterfly sunning itself on Macedonian Pine, Hope's Walk, Hopetoun House. *(C.R.,M.R.)*

12.10.85 *Cordyceps ophioglossoides* on *Elaphomyces muricatus* under spruce in the Forest of Ae: also *Coprinus macrocephalus*. *(E.S.)*

A Painted Lady butterfly was seen in the sun on a back door mat in a garden in the Corstorphine area.

14, 16 & 18.10.85 Painted Lady and Small Tortoiseshell butterfly feeding on *Sedum spathulifolium* in a north Corstorphine garden. *(I.M.)*

18.10.85 Dead Water Shrew found under a stone - Milkhall Pond. *(E.M.S.)*

20.10.85 Pygmy Shrew picked up in Alva Glen. *(E.F.)*

28.11.85 Wester Craiglockhart Hill - one Dog Fox, running in the winter sunshine; one pair of Blackcaps. *(C.R.,M.R.)*

Forth Island Bird Counts 1985

1985 has been an unsatisfactory year with no visit to Inchkeith and no count of Kittiwakes or Guillemots on the sheer east face of Craigleith. The weather has contributed to what has proved an erratic seabird breeding season.

Of all the Forth seabirds the only group which has caused concern for many years has been the terns. This year was no exception with the seemingly unending north-east winds in spring having a devastating effect on the East Lothian colonies. At Tyninghame the terns appeared as usual but the bitterly cold winds and the drifting sand caused all the Little Terns and most of the Common and Arctic Terns to leave within a fortnight. Some Little Terns laid unsuccessfully at Aberlady and only a few Common/Arctics managed to fledge young.

On Fidra on 2 June we found some 40 birds but only 12 nests with eggs, most of these uncomfortably close to breeding Herring Gulls. One gull nest was only 10 feet away from a sitting tern - much closer than the reputed 'minimum'

	Craigleith	Lamb	Fidra	Eye-broughty	Inch-mickery
Fulmar	113	2	100		X
Cormorant	46	134		17	
Shag	345	303	55		29
Eider	75+	7	228		79
Gt. Bl-back	3	1			
Lesser Bl-back	c350	X	c50		X
Herring Gull	?1500	X	c500		
Kittiwake	X	125	494		
Common Tern			32 { 20+		247
Arctic Tern			2+		
Roseate Tern					10
Sandwich Tern					442
Razorbill	57	24	49		
Guillemot	X	c2200 bds	142 bds		
Puffin	2400 bds	8	260 bds		

All figures are sites or pairs except where indicated. X means present but counts unavailable. I am grateful to the RSPB for providing the Inchmickery data.

distance which the terns will tolerate. These sitting gulls were being continually 'dive-bombed' by the terns. To try to prevent a repetition of last year's tern nest failures drastic action was decided on and some 50 gulls' nests and eggs were destroyed. If the eggs are taken the gulls will readily relay but if the nest lining is also removed most of the gulls will desert the nest-site. A fortnight later the RSPB found 32 nests of Common/Arctic and most of these were still extant in July - justification for the destruction of the gulls' nests?

The RSPB report that on Inchmickery Common Terns had 247 nests (still very low) but 442 Sandwich and 10 Roseate nests are more satisfactory. Other Forth colonies include the long established one at Leith Docks where some 200 pairs of Common Terns nested this year at this very safe site. Small but increasing numbers of Common Terns nest on the Isle of May with 36 nests in 1984. Also in that year there was an influx of Arctic Terns with 19 nests counted. Some of these birds may have transferred from the exposed East Lothian coastal sites and, hopefully, will have been augmented by others taking shelter from the 1985 north-easterlies. In the post-war period the May held an enormous colony of thousands of pairs of four species of terns. With the control of the 20,000+ pairs of big gulls which swamped the island later there is hope that it can once again have a large and thriving colony.

The north-easterlies have also had some effects on the islands. On the exposed Bass Rock the number of Shags' nests was down by almost half from nearly 200 last year. However the totals for the other East Lothian islands were only some 20 fewer at 703 nests. It was very obvious on 8 June that the Shags on Craigleith were frantically trying to make up for lost time pushing on with the business of courtship and nesting. Many birds were egg-laying on almost bare rock with a pathetic few scraps of weed as nesting material. Curiously Eider are reported as having a very good season in Forth with record nest counts on Fidra, Inchmickery and Lamb. It may be that it is an ill wind ...

R.W.J. Smith

Elephant Hawk-moth in Edinburgh

On 31 May 1985 an Elephant Hawk-moth (*Deilephila elpenor*) emerged from its pupa in the nursery at Roseburn Primary School, Edinburgh. It was one of three caterpillars found in an allotment in the city the previous year.

The caterpillars are brownish grey, sometimes greenish. When threatened the head is retracted into its body causing the false eyes on the head to expand. This, combined with a swaying movement from side to side, is reminiscent of an elephant's head.

The caterpillars feed mainly at night. They eat Willowherb and Bedstraw, and also Enchanter's Nightshade and Fuchsia.

The moth itself is a magnificent creature with a wingspan of 2¾ inches, beautifully patterned in fuchsia pink and khaki green. The eyes are a clear lime green colour.

The Elephant Hawk-moth is predominantly a moth of the southern half of England, and rare as far north as Edinburgh, although in the last ten years its numbers have increased slightly.

The moth pupa at Roseburn School had been kept in a box in an unheated garage through the winter. This may account for its survival and the failure of the other two pupae which were kept in houses at room temperature. After consultation with staff of the Royal Scottish Museum it was released in a garden at Murrayfield - after dusk when there were no birds about.

H. Thom

Butterflies in a sunless summer

In this cold, wet year I have seen all the species expected on Arthur's Seat but none in any number, though the Small Copper was more plentiful than in the poor years of the 70s.

There was a spring invasion of Painted Ladies on the South Coast but I've noticed only one in the Edinburgh area - on 19 October at Torduff.

The most interesting of my recordings was the appearance of 3 Orange Tips at the Duddingston end of the old St Leonard's Railway on 1 June. As far as I know they haven't been noted at Duddingston since the 1850s. I saw them again at Eskside, Musselburgh, Roslin Glen and the canal near Hermiston.

My most rewarding experience was on Raasay where on two hot August days (18/19) I noted 10 species which included the Speckled Wood (second brood), the Scotch Argus (30 or so in one field), the Grayling and the Green Hairstreak, all in the sheltered woodland areas of the island.

W. Grubb

A Badger in Edinburgh *(from the Caledonian Mercury, 28 December 1752)*

On Monday night a Badger or Brock found its way in a Gentleman's Cellar at the Foot of Don's Close, where it killed 5 or 6 poultry, and afterwards into his Dwelling-house, without being observed by any person; and having got under a Bed, raised a hideous noise, which put the family into the utmost consternation, and made them run into the street and alarm the Neighbourhood, who, coming to their assistance, with great difficulty, run it through with a sword. - 'Tis thought the Creature has been chased over the Nor Loch, or from a lodgement it might possibly have at the foot of the Castle.

Received from P. Hamilton

Landing strip

Greylag Geese regularly feed on the local golf course (Prestonfield). After a fresh fall of snow their activities could be traced. On coming in to land they typically showed 16 or 17 footsteps of decreasing distance until their normal walking gait was gained. One bird had managed it in 10 paces. On landing the first impact was with both feet fairly close together, usually some 35 cm apart on a fore and aft measurement. The widest steps then follow at around 60 cm, decreasing slowly at first and then quickly to walking pace of around 24 cm. Take off was gained by two prods of the feet and two wing beat brushings in the snow.

D. Gill

On the canal bank

Last year I wrote that I had found a few plants of the Common Twayblade (*Listera ovata*) on the canal bank - and then the plants disappeared. This summer I went back to the same spot and found about twelve plants growing on both sides of the canal path. However, I returned about three weeks later and - no plants! So I am wondering if they could have been eaten right down to the soil by animals - there certainly are deer, badgers, foxes and shrews using the path and I can only think that this orchid is considered a delicacy! There is no sign of uprooting or even any old stems or leaves.

I have occasionally been watching a badger sett which is situated under a most beautiful larch tree on the canal bank. I can sit with my hot water bottle opposite the sett and keep watch! However - no luck, but plenty of good, clear prints round the sett when I have revisited it. I think I have just been unlucky at not being there at the right time and, also, not having time to go often enough. Maybe next year I might see the badgers, and will let you know.

R. Calder

A winter Pentland walk

On Thursday, 24 January 1985 three members of the ENHS chose to walk in the snow-covered Pentland Hills. By 10.45 we were parked at the Alan Ramsay Hotel, Carlops, kitted for the cold, and on our way on the path that leads to Paties Mill. The snow cover was about 3 to 4 inches: later we were to meet drifts nearer 3 feet deep.

Very little was to be seen, but here is an account of our observations. The commonest bird in numbers and distribution was the Carrion Crow, and 25 were counted flying away from sheep feeding troughs at Fairliehope Farm. Three Mallard rose from the mainly frozen North Esk Reservoir, and later a pair came off the Henshaw Burn. This burn also produced a Dipper and a Common Snipe. At Fairliehope Farm we disturbed a cock Blackbird. A few more species were seen on the way back, two Kestrels, five Fieldfares, one Common Gull, and a Blue Tit in trees near Carlops. All were associated with the lower farmland.

Three mammals, excluding man, were seen, Black-faced Sheep, one Pony (its coat clipped, would you believe), and a Brown Hare. The sheep had been brought to feeding places, though later we were to see them spreading out. The pony, seen to scrape the snow in the fashion of the sheep, appeared to be eating Whin. Against the snow the Brown Hare showed up prominently.

Tracks were to be expected: boots, tractor, the shepherd's tri-bike's balloon tyres, ski pole (but not skis), child's sledge, dogs, hare, rabbit, crow and some smaller bird - but what could one make of a "fox" not walking in a straight line? At one point there was a scattering of Red Grouse feathers.

What wind there was came from the west, hardly noticeable at first, but more pronounced as we climbed higher and lost the bield of the Carlops Hill and The Mount. One began to appreciate the significance of "wind-chill". There was no break in the cloud near us - a watery sun did show very briefly about noon - but to the north, beyond the sharply-defined edge of the cloud, was a pale greeny-blue sky. On our return, about 2 pm a little snow began to fall.

We never reached the Bore Stane but gave up at about 1200 feet and about half a mile beyond the reservoir. Try the hills in winter, in company, well-clad, well-shod, but do not try too much - it is gey hard work.

C. Rawcliffe

An account of a visit to Hermitage of Braid in September 1984

"The best time to look at and identify trees is in the spring or in the autumn." Mr R. Watson, at the time Assistant Director of the Department of Recreation and Leisure, Midlothian District Council, spoke of this to eleven of our Members as he guided us through the Hermitage of Braid on a sunny September Saturday. He told us that a 'Tree Survey' had been carried out in 1971 when every tree was measured, its size, class and species distribution recorded. The visual impact of a tree is taken from its basic width and the best height to measure this is 4 ft 3 in. above the ground. The survey revealed if there were too many of one species, or of one size.

The predominant species of tree was found to be the sycamore at 37%, then elm 28%, beech 13%. Oak, ash and conifers were found to be in equal percentages at 6%, while others amounted to 4%. In order to diversify and improve the woodland, more conifers were planted following the survey.

Leaving the main path we walked up and along the bank on the right, Braids side, where conifers had been planted. We were shown Lodgepole Pine (*Pinus contorta*), a straight tree of North America with leaves in pairs giving a tangerine smell, darker green in colour than the Scots Pine (*Pinus sylvestris*), there with its blue-green leaves and warm pink brown bark, also European Larch

(*Larix decidua*), Sitka Spruce (*Picea sitchensis*) and Norway Spruce (*Picea abies*). We were told of the difficulties of growing Norway Spruce in Scotland. This tree is used to a more defined climate with cold winters and mild summers. An early mild spell in Scotland in February/March can start regrowth and a late frost can damage new growth. The Western Hemlock (*Tsuga heterophylla*) was identified by its leaves of different lengths and smooth dark bark, rough at the base.

On our return along the Blackford side of the Hermitage on the path high above the burn, we noted the lack of ground vegetation in the beech woodland with its dense canopy. Two areas further along were fenced off to allow natural regeneration of trees. Studies are being made in management of broadleafed trees. Planting in the Hermitage has taken into account suitable habitats for birds and insects.

We thanked our leader, Mr Watson, and all appreciated the care being taken to maintain the trees of the Hermitage of Braid and preserve these delightful woodlands within our City of Edinburgh.

E. O'Donnell

EXCURSIONS 1985

Key for excursions:

B - botany
F - fungi
G - general
O - ornithology
ML - mosses & liverworts
Gr - grasses
S - sea shore

Day excursions and weekends

19 Jan	Blackness Circular Walk	*O*	Mrs M. Robertson
17 Feb	Lochore Meadows Country Park	*G*	Miss A. Irvine
23 Mar	South Queensferry	*ML*	Mr J. Carlyle
4 May	Lammermuir Circuit	*G*	Mrs M. Robertson
11 May	Roslin Glen	*B*	Mr S. Clarke
17 20 May	Inverary Weekend		
25 May	Balnaguard Glen	*B*	Mr M. Rebane
1 Jun	Bass Rock with SOC	*O*	
2 Jun	Lamb and Fidra with SOC	*O*	
8 Jun	Tyninghame	*S*	Mr D. Jones
8 Jun	Craigleith Island with SOC	*O*	
15 Jun	Whitlaw Mosses and River Tweed	*B*	Mr A. Panter
22 Jun	Riechip Den	*BO*	Mr G. McDougall
29 Jun	Carron Valley	*G*	Mr I. McCallum
6 Jul	Grangepans	*B*	Mr J. Carlyle
13 Jul	John Muir Country Park with Dundee Naturalists' Society	*G*	Mr A. Clunas
20 Jul	Craik Forest	*G*	Mrs V. McFarland

27 Jul	Barns Ness	*B*	Mrs M. Robertson
3 Aug	North Esk	*G*	Mr C. Rawcliffe
10 Aug	Longniddry Old Railway Line	*B*	Miss J. Muscott
17 Aug	Oldhamstocks Circular Walk	*G*	Mrs M. Watson
24 Aug	Glentress Forest, Peebles		Mr J. Caulfield Mr R. Lines
31 Aug	Vogrie Country Park		Miss C. Gordon
7 Sep	John Muir Country Park with BSE	*F*	Dr P. Mason
13 16 Sep	Glen Affric Weekend		
21 Sep	Peebles Circuit	*G**	Mr G. Bell
5 Oct	Monteviot Woodland Centre with BSE	*F*	Mr S. Roberts
16 Nov	Threipmuir to Loganlea with BSE	*ML*	Dr D. Chamberlain

Evening excursions

8 May	Harelaw reservoir	*G*	Mrs V. McFarland
15 May	Currie to Balerno	*O*	Mr B. Clunie
22 May	Roseburn to Dean	*G*	Mr C. Rawcliffe
29 May	Hopetoun House Grounds	*G*	Mr C. Rawcliffe
5 Jun	Corstorphine Hill	*G*	Mrs M. Robertson
12 Jun	Pepper Wood, Dalmeny	*B**	Mr J. Carlyle
19 Jun	Bawsinch	*G*	Mr C. McLean
26 Jun	Cammo Wood	*B*	Mr J. Carlyle
3 Jul	Warriston Cemetery	*G*	Mrs E. Farquharson
10 Jul	Holyrood Park	*Gr*	Mrs O. Stewart
17 Jul	Instruction in the use of a Flora		Miss J. Raeburn
24 Jul	Calder Wood	*G*	Mrs S. Gray
31 Jul	Moth Trapping and Barbecue at Almondell		Miss M. Konik

**cancelled because of the weather*

REPORTS AND EXTRACTS FROM REPORTS

Full lists of animals and plants seen on outings are not included in the reports but are lodged with the Records Secretary.

Blackness Circular Walk - 19 January 1985

A dozen or so members of the Society spent an enjoyable day in tolerable winter conditions. The hills were snow-covered and snow remained in ploughed fields and places where the sun did not penetrate. Considering the hard conditions being experienced in the south of England from Kent to Dorset we were very fortunate.

The party followed a route from Blackness Castle foreshore first eastward through Wester Shore Wood (Hopetoun Estate, by permission) by the upper path to Midhope Burn, then we returned westward to the Blackness foreshore by the lower path.

The sea was very calm but somewhat murky. We were pleased to see several Great Crested Grebes, a Red-throated Diver and later a Black-throated Diver very close to the shore. Two early Kittiwakes were sighted. A group of Red-breasted Mergansers amused us by their diving habits. They would disappear almost simultaneously and reappear like corks bobbing to the surface.

There was little bird life in the woodland though we saw several Redwings. Our most interesting discovery was the sleeping places of Roe Deer. We saw where they had scraped the leaf litter aside to mark their beds and some hoof slots were very clearly marked. The two areas we found were in sheltered positions quite close to the edge of the woodland. The grass was very green for mid-winter and we noted new growth which must have made very nutritious feeding.

As we reached the car park we noticed large birds ahead, flying in V formation. "Geese!" we cried, but we were wrong! They were Herring Gulls flying in perfect formation, like a slow motion 'Red Arrows' squadron. We wondered if more people have noticed the habit of gulls flying to roost in this fashion.

M. Robertson

Outing to Lochore Meadows - 16 February 1985

It was a glorious winter day when a baker's dozen members visited Lochore Meadows Country Park.

Looking across the rolling green countryside around the (frozen) loch, it is now extremely difficult to imagine the dereliction present there when the last coal pit closed in 1967. This is the largest land reclamation scheme in Britain and we have to applaud the courage and vision needed to undertake the transformation. The million pounds spent has proved to be a rich investment; it has revitalised a dying community, attracted wild life to the area and made it a place where people want to live or to visit.

We counted thirty-three species of birds: we noted roe deer tracks and one member had a brief sighting of a stoat in ermine. Teal and Mallard frequent the loch as well as about 80 Coot. A Buzzard was sighted and it was a delight to hear a Skylark singing when we arrived. Later we heard the cheerful burst of song from a Dunnock and we noted the Black-headed Gulls were developing black heads of breeding plumage, all pleasant signs of approaching spring.

The ground was hard frozen, like the water on the loch. We enjoyed a sunny picnic and the gorse as always was in bloom.

We gave our thanks to the Ranger, Alison Irvine, for taking us around and making our day so interesting.

M. Robertson

Inverary Weekend - 18-20 May 1985

Saturday, 18 May:

A group of 10 assembled at Auchindrain Country Museum on a mild but overcast morning. Mr R.S. Smith, who has charge of the museum, met us there and led the group throughout the day.

We walked up Leacann Glen and from various vantage points Mr Smith pointed out ways in which human activity had influenced the landscape. Most recent farm activity has been along the valley floor although much of the land here is still in need of drainage.

Further up the hill we could discern old rigg and furrow lines in some of the pastures. This area had been largely arable in the 1700's and the remains of a grain grinding mill were still visible near to a waterfall on the Leacann. At this time the lower ground was probably wet grazing land.

The most recent influence was the fairly recent afforestation of the upper valley slopes with conifers. The observed effect of this has been a falling off in the grouse population of the area.

Leacann Loch was found also to be a result of local industrialisation in that it is in fact a reservoir installed as a water source for copper and lead mining activity, now ceased.

Mr Smith told us that whilst in the glen, we were within three miles of two Eagles' and one Peregrine's eyrie and that Black-throated Divers were usually to be seen on the lochans at dusk. Unfortunately we did not see any of these birds. He also said that skylarks were rarely to be seen in the area so we were lucky indeed to see and hear one at lunch time.

Later in the afternoon we drove a few miles south to Brainport Bay, the name being derived from it being the place for quarrying and shipping of grinding stones or querns.

On the rocky beach, as the tide receded, we were able to find and catch small fish such as butterfish, blennies and gobies. Looking into deeper water from off the rocks, we could see sea urchins and starfish on the seabed and sea gooseberries floating just below the surface.

On our return from the shore we were shown a recently recognised prehistoric calendar device. It consisted of a sighting platform and two perpendicular sighting stones which were aligned with the sunrise on midsummer's day. Other stones have been discovered at right angles to these - one of them across on the other side of Loch Fyne.

Sunday, 19 May:

On Sunday we started our day in Glen Shira at the Forestry Commission gate and then walked up the glen. Most of us detoured to see the ruin of Rob Roy's cottage on a terrace overlooking a ravine. Maidenhair Spleenwort (*Asplenium trichomanes*) and Brittle Bladder-fern (*Cystopteris fragilis*) were seen growing here. The party then went up to the dam. Buzzards were in evidence and 20 or so Red Deer were seen on the hillside across the glen. All around in the damp places were Lungwort (*Pulmonaria officinalis*) and pale Marsh Violets (*Viola palustris*) and starry, green 'waterfalls' of leaves of Yellow Saxifrage (*Saxifraga aizoides*).

Monday, 20 May:

Monday was a do-it-yourself day, though most of us opted for Crarae Gardens on Loch Fyne side. These are privately owned gardens which show an excellent example of man improving on nature. A tumbling stream is bordered by Rhododendrons and Azaleas in full bloom at the time of our visit. A feature of the gardens is the Eucalyptus trees alongside Scots Pine and Birch trees, all a haven for birds including Willow Warbler and Chiff-chaff. A delightful place to visit and enjoy nature.

We then all went our separate ways after a superb weekend of mainly sunny weather with some soft rain in the mornings.

B. Gill
W.D. Gill

Outing to Balnaguard Glen Reserve, Perthshire - 25 May 1985

Saturday, 25 May saw 29 members embark on the only bus outing of the season. Our destination was Balnaguard Glen Reserve, near Dunkeld (OS map reference NN 947 518), under management of the SWT. The leader was Mick Rebane, whom we met on our arrival.

The glen itself is a steep sided gorge formed by the Balnaguard burn, a tributary of the Tay, which has incised deeply into glacial drift deposits overlying Dalradian schists and gneiss. The lower part of the glen is wooded along the riverbank with alder and willow dominating. Away from the immediate riverbank there is a more open community, dominated by juniper and wild rose with some hawthorn and guelder rose. Further upstream, near the waterfall, the woodland cover of ash, rowan, hazel and birch becomes more dense with abundant epiphytes and many bryophyte-rich flushes among a herb-rich ground layer. The south facing slope of the glen is largely unstable, with extensive landslips. It was just past one of these landslips that we stopped for lunch. Some of the more agile members of the party crossed the burn and picnicked on the opposite bank.

Rain had been threatening but kept off till the early afternoon when we left the main burn and followed a tributary, which took us up a steep, grassy slope through more juniper to a moorland plateau. Here we came upon Chickweed Wintergreen (*Trientalis europaea*), Lousewort (*Pedicularis sylvatica*), Wood Sorrel (*Oxalis acetosella*) and Wood Anemone (*Anemone nemorosa*), also two Green Hair-streak Butterflies.

Our guide took us to a twelve-foot-square enclosure which was to be subdivided. One half to be 'disturbed', e.g. by rotovation and the second half to be left as it was. Each half to be divided into one part seeded with juniper and part left. Observations as to what grows in each quarter will help the SWT with replanting - or otherwise - of the moor.

Our return route took us through one of the few remaining sizeable areas of juniper found in the Highlands. Moschatel (*Adoxa moschatellina*) was growing in the long grass and on examining the fallen trunk of a dead tree, a Woodpecker nest was discovered (see Observations 25.5.85). By this time the rain was falling heavily. All day we had been accompanied by a small terrier from one of the local houses and just as we emerged from the wood, he trotted into view with a small rabbit dangling from his mouth. As he settled down to enjoy his meal, we piled back on the bus for a welcome cup of tea.

J. Lyburn

Outing to Tyninghame - John Muir Country Park - 8 June 1985

The principal object of this excursion was to look at the fauna and flora of a rich area of seashore and to note, besides the great diversity of species, something of the manner in which the common forms arrange themselves up and down the shore with respect to the length of time they are covered during each twice-daily tidal cycle. This is best seen on a rocky shore and is particularly well demonstrated by the large brown seaweeds and some of the commoner and more obvious animals like the Acorn Barnacles and the Periwinkles. The highest rocks on the shore bear two species of barnacles, *Balanus balanoides* and *Eliminius modestus*, and among them and within the empty barnacle shells were some Small Periwinkles (*Littorina neritoides*) and many small specimens of the Rough Periwinkle (*L. saxatilis*). The new (April 1985) settlement of *Balanus* was clearly visible but the upper shore specimens were noticeably smaller than those we found a little lower down the shore.

Moving on to a flatter reef-like area we found the Channel Wrack (*Pelvetia canaliculata*) and the Spiral Wrack (*Fucus spiralis*). Some plants of both species bore the developing fruiting bodies, although others, last year's sporelings, did not. The common Bladder Wrack (*Fucus vesiculosus*) which occurs slightly lower down the shore was easy enough to distinguish as 'old' plants, but the young plants were only just beginning to develop their first bladders and so many looked the same as young plants of the Spiral Wrack.

Moving into a 'gully' with fairly steep sides we found the small red seaweed *Laurencia pinnatifida*, known as Pepper Dulse, and many Dog Whelks (*Nucella lapillus*) together with a few of their vase-like egg capsules. The pools remaining in the bottom of the gully were frequently occupied by innumerable Common Periwinkles (*Littorina littorea*), although a sudden movement from some specimens revealed that they were old and empty shells, now occupied by small Hermit Crabs (probably *Eupagurus bernhardus*). Beadlet Anemones (*Actinia equina*) were quite numerous as we moved down towards low-tide level, those in the damp and shady conditions of the gully wall appearing to be simple red or brown blobs of jelly, whereas those still submerged in pools had their tentacles extended showing the brilliant and characteristic blue spots.

With an easterly wind we were not lucky enough to have a really low tide, but we did find the upper boundary region of the Serrated Wrack (*Fucus serratus*) and the Kelps, *Laminaria digitata* and *L. saccharina*, the former with its strap-like 'fingers', the latter with its 'crinkly' fronds. One attractive species associated with these algae which we found in quite good numbers is *Patina pellucida*, the Blue-rayed Limpet, while Common Limpets (*Patella* spp) were found very frequently on all exposed rock surfaces.

Other species of interest that we found included the Starfish (*Henricia sanguinolenta*) and a number of small specimens of the Common Starfish (*Asterias rubens*); the Crumb-of-Bread Sponge (*Halichondria panicea*), the Common Whelk (*Buccinum undatum*), innumerable crabs, mostly small dead specimens of *Carcinus maenas*, the Common Shore Crab, but also a few specimens of the Long-clawed Porcelain Crab (*Porcellana longicornis*). Stones were found on the lower shore occasionally bearing the white, 'wandering' tubes of the worm *Pomatoceros triqueter* and empty tubes which were found in some pools where they had been washed by the tide were probably those of the worm *Lanice conchilega*. Even the strand-line, thick with old Laminaria plants showed us a few items of interest, such as Sea-mat (*Membranipora membrancea*).

Three species of seaweed 'new' to the local list were found, thanks to the eagle eyes of some members. Those were the red algae *Membranoptera alata*, *Gracilaria verrucosa* and *Lomentaria articulata*. No doubt there are many more waiting to be added to the list, so if any member feels inclined to carry out a more intensive survey of the area I am sure their efforts will be well rewarded.

Not a brilliant day for weather but the beauty of the setting and the diversity of interest in all fields of natural history made it a worthwhile, pleasurable and companionable day for me and, I hope, for those members of the Society who ventured so far afield.

D.H. Jones

Outing to Whitlaw Mosses and River Tweed, Selkirkshire - 15 June 1985

In the forenoon, Mr Andrew Panter and Mr Andrew Buckham led the party along Lindean Reservoir and then over to Murder Moss. In the afternoon, we went to Benrig and walked along the River Tweed for about a mile, towards St Boswells.

Borders Regional Council own Lindean Reservoir and it is now managed as a nature reserve. Lindean was considered rich in invertebrate life until it was stocked with fish and now the invertebrates are much poorer in species and in numbers. The reservoir is a haven for many species of birds. Boxes are put up to attract the Goldeneye to breed. Many species of plants are growing around the reservoir, such as Common Butterwort (*Pinguicula vulgaris*), Northern Marsh Orchid (*Dactylorhiza purpurella*) and the hybrid Avens (*Geum rivale x urbanum*).

The undulating terrain of the area was created by the folding of the rocks caused by the activity of the Subduction Zone. The hollows were then accentuated by the erosive action of the glaciers and what is known as basin mires filled some of the hollows. Two hundred of these mires still exist which are lime rich and therefore form fen habitats. Murder Moss (10 ha), Blackpool Moss (4 ha), Beanrig Moss (2 ha) and Nether Whitlaw Moss (4 ha) form the Whitlaw Mosses, a National Nature Reserve which is managed by the Nature Conservancy Council as an example of this terrain.

Coralroot Orchid (*Corallorhiza trifida*), Cowbane (*Cicuta virosa*), Holy Grass (*Hierochloe odorata*), Narrow Small-reed (*Calamagrostis stricta*), Alpine

Rush (*Juncus alpinoarticulatus*) and a moss (*Homalothecium nitens*) are six northern species which make this fen habitat different from the fens of southern England. A rare crane-fly has been recorded and 67 species of water beetles have been recorded from the whole area, 48 of these occurring on the Whitlaw Mosses Reserve. One of these water beetles (*Hydroporus glabriusculus*) was discovered on the reserve in 1974, and was the first record for Britain of this species.

An interesting feature observed was a wet flush where carbonates encrusted the leaves of the moss and only a few inches away Calluna and Butterwort, typical of acid conditions, were growing. At another point springs were bubbling up.

The damselfly (*Enallagma cyathigerum*), the dragonfly (*Sympetrum scoticum*), the Small Heath Butterfly (*Coenonympha pamphilus*) and the Alderfly (*Sialis lutaria*) were the larger insects observed.

The main plants of the marsh were Bottle Sedge (*Carex rostrata*), Slender Sedge (*Carex lasiocarpa*), Marsh Cinquefoil (*Potentilla palustris*) and Bogbean (*Menyanthes trifoliata*). Several species of Willow were present, which require management in order to retain the area as a marsh.

On our way to the Tweed we stopped at Blackpool Moss to look at a good stand of Holy Grass which was in flower and showing up beautifully in the sunlight.

The trip along the Tweed revealed 37 species of plants, none was unusual. The more interesting were Moschatel (*Adoxa moschatellina*), Wood Stitchwort (*Stellaria nemorum*), Three-nerved Sandwort (*Moehringia trinervia*), Goldilocks (*Ranunculus auricomus*), Toothwort (*Lathraea squamaria*), Lords and Ladies (*Arum maculatum*), Wood Sedge (*Carex sylvatica*), Hard Shield Fern (*Polystichum aculeatum*) and Hart's Tongue Fern (*Phyllitis scolopendrium*).

The Silver Ground Carpet Moth (*Xanthorhoe montanata*) was evident and one Orange Tip Butterfly (*Anthocharis cardamines*) was spotted. Mr Buckham pointed out eggs of the Orange Tip, single eggs having been laid on the leaf stalk of Garlic Mustard.

E. Gillespie

Outing to Bawsinch - 19 June 1985

Some time was spent in the hide, from where we observed the birds on Duddingston Loch. Mr Colin McLean then escorted us around the reserve, pointing out some of the introduced species. It is the aim of the SWT to represent, on the reserve, all species of native British trees.

We looked at the Gunn Loch (financed from the ENHS Gunn Fund), which after a year's growth still looks rather bare: Bogbean (*Menyanthes trifoliata*)', Flote-grass (*Glyceria fluitans*), Water Plantain (*Alisma plantago-aquatica*), Water Crowfoot sp (*Ranunculus* sp) and Greater Bladderwort (*Utricularia vulgaris*) have been introduced. Spoil from the digging of the pond is piled up along the path from the gate to the hide, and Teasel (*Dipsacus fullonum*), which has attracted Goldfinches, is now growing on it.

We were shown the 80 Northern Marsh Orchids (*Dactylorhiza purpurella*) which had been rescued from a shale bing near Pumpherston, West Lothian. The bing had almost been removed.

The Wild Service Trees (*Sorbus torminalis*), planted in 1982, were pointed out - these should not be confused with the cultivated Service (*Pyrus sorbus*) which has leaves more like that of Rowan.

E. Gillespie

Outing to Riechip Den, near Dunkeld - 22 June 1985

On a cool and wet June day a party of 12 stalwarts assembled at Dunkeld, prior to setting out from Butterstone Village Hall to follow the Buckny Burn through Riechip Den. The Den is steep-sided and well-wooded, and the combination of shade, soil, rocks and river favours ferns, of which some 13 species were identified.

One inquisitive Roe Deer, some Wrens and a Dipper were seen, but the Buckny Burn was in spate and its noise drowned the birdsong. To avoid the same fate the party had to create a path across the steep slope above the burn where the main path was submerged. All were safely accounted for.

While the ferns were identified and noted, the mosses, lichens and other aspects of the Den's natural history were not given the same attention, and another visit with a different emphasis might be equally rewarding.

Bedraggled but unbowed the party emerged from the Den on to the private road to Riemore, being greeted by the local Cuckoo.

After lunch there was much of interest to the ornithologist. A pair of nesting Ospreys, a male Hen Harrier, a family of Canada Geese and a number of smaller birds were seen between the Den and Loch Ordie, as well as Fallow Deer and the more elegant roe.

On the return journey George McDougall, our leader, read a passage concerning a local holy well, now known as Grews Well, from "Dunkeld: An Ancient City" and showed us the curious font stone in the well itself.

On the road beside the car park, near which stands a red oak, a creche of very small Pheasant chicks were floundering and had to be rescued from an approaching car by members of the party. They then reluctantly left them in the hope that their mother would return before a fox or stoat came that way.

George McDougall's enthusiasm for this area and its plants and animals did much to enliven a damp day.

D. Adamson

Outing to Carron Valley, near Denny, Stirlingshire - 29 June 1985

Eleven members met at 10.30 am on Saturday, 29 June at the Town House in Denny. Cars were taken up and parked at Fankerton. The party walked up the Carron Glen for about 1½ miles (2.4 km), through deciduous woodland and some grassland. Flowering plants seen included Globe Flower (*Trollius europaeus*).

From the bridge over the Carron we had a delightful view of Tree Creeper, Dipper and Grey Wagtail as well as Blue Tit and Song Thrush. Beside the bridge there is an islet in the river on which a plant grew which we could not identify. It was later identified as *Peltiphyllum peltatum* which is a member of the Saxifrage family - a garden escape - which appears to be spreading in the wild.

Lepidoptera were represented by the Chimney Sweeper moth which flies during the day and whose larvae feed on the flowers of Pignut (*Conopodium majus*); Pearl-bordered Fritillary, Green-veined White and Large White butterflies.

Slightly out of season were several specimens of a fungus, the Blusher (*Amanita rubescens*).

We returned to the cars and drove to the picnic site at the east end of Carron Reservoir where lunch was taken. This higher open forestry habitat contrasted with the wooded glen at Fankerton. The party walked along the south side of the Reservoir. The following birds were seen:

Great Crested Grebe, Curlew, Common Gull, Black-headed gull, Wood Pigeon, Collared Dove, Swift, Swallow, House Martin, Rook, Jackdaw, Wren, Song Thrush, Blackbird, Meadow Pipit, Greenfinch, Crossbill, Chaffinch.

Although the area is predominantly conifer plantation there are several open areas which give a different selection of flowers from the wooded glen at Fankerton. Several marshy areas gave Sedge spp, Rush spp and other plants such as Marsh Cinquefoil and species of Water Crowfoot.

The party returned to the cars about 4 pm

I. McCallum

Outing to Warriston Cemetery - 3 July 1985

In spite of the evening being cool, grey and damp, 12 members came for a walk round part of Warriston Cemetery. The oldest part of the cemetery at the south end nearest the Water of Leith is now only partially cared for, the grave sites are overgrown, many stones are in a dangerous condition, and the area has been invaded extensively by Giant Hogweed and Japanese Knotweed. The paths, however, have been kept clear enabling one to see at close quarters many interesting trees not normally associated with cemeteries, such as Hornbeam, Red Oak, Walnut, Italian Black Poplar, False Acacia and Caucasian Wingnut.

The ground was bought around 1843/44 from the Warriston Estate for use as a cemetery, and it seems unlikely that all these trees had already been planted by that time.

The Environmental Resource Centre produced a Tree Trail for the area a few years ago. This is an excellent guide, though it requires updating and a few corrections need to be made.

It is unfortunate that the old tombstones have become so dangerous that children should not play there unaccompanied.

E. Farquarson

Joint Outing to John Muir Country Park with the Dundee Natural History Society - 13 July 1985

Our leader for the day was Mr A. Clunas, the Ranger for the John Muir Country Park.

We started off from the Linkfield Car Park and walked down to the dunes. Even just on the pathway we were surrounded by the wild flowers. The first ones we saw were the Common Stork's-bill (*Erodium cicutarium*), Lady's Bedstraw (*Galium verum*) and Hedge Mustard (*Sisymbrium officinale*). We then turned left and walked along the dunes where we saw many Six-spot Burnet moths and the first sighting in the Park for 1985, of the Dark Green Fritillary butterfly (*Mesoacidalia aglaja*). The caterpillars of this butterfly feed on violets which were plentiful in this area.

We then walked along paths bright with Common Bird's-foot-trefoil (*Lotus corniculatus*), Eyebright sp (*Euphrasia* sp), Yellow Rattle (*Rhinanthus minor*) and Wild Thyme (*Thymus drucei*) to the saltmarsh, which we crossed to reach the Tyne Estuary to look for birds.

After lunch back at the car park we drove to Tyninghame for the afternoon. Mr Clunas pointed out the Aspen (*Populus tremula*) and Field Maple (*Acer campestre*), and a Red Squirrel's drey in a Scots Pine by the path. Further on he showed us a species of Mining bee, which makes a small hole in the sand in which it lays its eggs.

The walk continued over the headland to St Baldred's Cradle where we had good sighting of Shag and Cormorant sunning themselves on the rocks. We then walked rather quickly back through the woods to the car park for the Dundee people to return to their coach.

Mr Clunas was an excellent leader, very knowledgeable and humorous and a believer in smelling plants to confirm their identity. For instance, Agrimony smells of pineapple and Scots Lovage smells of parsley.

B. Gill

Outing to Craik Forest - 20 July 1985

It was atypically cold and wet for this time of year and the burnside vegetation was particularly lush.

The Early Purple Orchids (*Orchis mascula*) usually flowering from April-June were just at their best and there were many Pyramidal Orchids (*Anacamptis pyramidalis*).

Our party was particularly excited to see a splendid clump of Melancholy Thistle (*Cirsium heterophyllum*) looking anything but melancholy!

One compensation for the wet weather was that the waterfall was probably at its best.

B. Gill

Outing to Barns Ness - 27 July 1985

Victor Lugh, the Ranger, spoke to us about Barns Ness. For any group interested in natural history, the area is a fascinating one to visit. The lighthouse is the second in a chain of five which guide shipping in the Forth Estuary. Migrant birds, attracted by its light, use the wildlife area and gorse scrub as a resting place. The geological trail is rich in fossils in a succession of limestones and sandstones below high water mark. During the last century the limestone was quarried and burnt in the lime-kiln which has been restored so that you can see how it worked. In the hollows there are now fresh water ponds with aquatic plants, larvae and insects.

The flora at Barns Ness is varied, there are salt marsh plants, aquatic plants, limestone plants and coastal dune plants, all of which grow in an area where no chemical fertilisers or pesticides are used, so that there is a rich insect life also present.

Eleven members of the Society had a quick look at the area, in poor weather, and we all agreed that there is such a lot to see and much that we missed. The bird migration had brought in Wheatear, Dunlin, Golden Plover, Redshank, Ringed Plover, Turnstone, Bar-tailed Godwit, Whimbrel and Curlew. Gannet, Kittiwake, Fulmar and Tern were seen. Three Sand Martins passed through in the afternoon, and a Sparrowhawk was seen hunting finches in the gorse scrub.

The rain sodden vegetation was pink with Thyme and Rest Harrow. Our most rewarding find was the Sulphur Cinquefoil (*Potentilla recta*). Other plants noted were the Hoary Willowherb (*Epilobium parviflorum*), the Seaside or Slender Thistle (*Carduus tenuiflorus*) and Thyme-leaved Sandwort (*Arenaria serpyllifolia*).

M. Robertson

Walk from Longniddry to Haddington along the Old Railway Line - 10 August 1985

A sunny day brought a good turn-out for this botanical trip along one of the many old railway lines to be found in the Lothians.

The railway can be divided into three stretches separated by demolished bridges. Starting from Longniddry the first stretch runs alongside the main Edinburgh-London railway for some distance and has a pleasantly meadow-like aspect with long grass and tall herbs, including Moon or Ox-eye Daisy, Vetches, Hardheads or Common Knapweed. Field Scabious and Wild Carrot. A small patch of Reflexed Stonecrop was presumably a garden escape.

The next section of track was until recently covered with railway ballast which had proved a congenial habitat for considerable quantities of Wood Vetch (*Vicia sylvatica*). Unhappily, this ballast has been removed from part of the track and it seemed preparations were under way for clearing the rest. The Wood Vetch and other interesting plants remain along the verges, but clearance of the ballast will undoubtedly affect vegetation even if the track remains unused. (The only other site where the author had seen Wood Vetch growing in such profusion was, interestingly, a mountain scree-slope, the stones being little bigger than railway ballast.)

A second rarity growing on this section of track was the Bristly Ox-tongue (*Picris echioides*), growing with various genuine Hawkweeds. Where the ballast still remains, a number of smaller lime-loving plants were found - Common Centaury, Fairy Flax, Hop Trefoil and the Common Spotted Orchid (*Dactylorhiza fuchsii*) which also grows on the bank. The Common Twayblade (*Listera ovata*) was discovered on the bank in time-honoured fashion when the party sat on it for lunch.

A short diversion in a potato field at the next break in the track revealed all four of the Red Dead Nettles which grow in Scotland (*Lamium amplexicaule*, *L. hybridum*, *L. moluccellifolium*, *L. purpureum*) - the first time the author had seen them all in one place.

The third and longest section of the track has a very overgrown stretch where it runs alongside a wood and at this point the party decided to turn back, returning to Longniddry by minor roads and tracks, but not before adding Yellow Rattle to the list, and also the rare Smooth Tare (*Vicia tetrasperma*). It grew alongside its rather common relative, the Hairy Tare (*Vicia hirsuta*). Altogether about one hundred species were recorded from the railway line and more from fields and roadside verges.

This outing provided a number of excellent views over the Lothians countryside, and also revealed some of the damage done to grain crops by the recent heavy storms: many fields were badly laid and would be difficult to harvest.

Insects seen in the course of the trip included Soldier Beetles, grasshoppers and ladybirds; the Green-veined White, Meadow Brown and Common Blue butterflies; and the Six-spot Burnet moth. A glimpse of a Harrier (probably Marsh) provided a little excitement for ornithologists, and a constant supply of wild strawberries (some of them white-fruited) provided sustenance for all.

J. Muscott

Outing to Aikengall Valley from Oldhamstocks - 17 August 1985

The hillsides were streaming with water after our exceptionally wet summer, so sensible people put on 'Welly' boots for our walk up Aikengall Valley from Oldhamstocks, led by Mrs Margaret Watson. Weather was dull and cloudy: soon a dismal drizzle began, so on went waterproof trousers as well as cagoules. Thus clad we set out, as we have done on several excursions this summer, to cope with rain and mud.

The burns were all running fast and deep, some of them fully of peaty water. Oldhamstocks Burn appeared also to have changed course. At one point the water disappeared below ground. We crossed a dry stream bed, full of tumbled stones left by flood water; the flow reappeared further down in a new channel flowing over pasture. This feature puzzled our party.

By lunchtime the weather had brightened. We explored the hillsides beside the burn at Wester Aikengall. Dark Green Fritillary, Meadow Brown, Common Blue and Small Copper butterflies were seen, as well as many flies and Soldier beetles. We noted where the cattle had chosen to lie on rushy beds. A wet rock face was the habitat of many mosses, New Zealand Willowherb (*Epilobium nerterioides*), Yellow Pimpernel (*Lysimachia nemorum*), Primrose (*Primula vulgaris*) and Marsh Willowherb (*Epilobium palustre*).

Higher up the hill we saw evidence of fire some years ago; stumps of gorse and heather remained. Coarse grasses and bracken had colonised more quickly than the heather. Harebell (*Campanula rotundifolia*), Yarrow Milfoil (*Achillea millefolium*) and Wild Thyme (*Thymus drucei*) grew here.

On our return we passed a small area of ancient woodland in a marshy area. It consisted of alder and birch with some willow. Sadly no young trees were present.

Oldhamstocks was very animated when we returned with the very popular Flower Show in progress. Our leader learned that she had won five prizes out of six entries, so that was a satisfying end to a very enjoyable day.

M. Robertson

Outing to Glentress Forest, Peebles - 24 August 1985

Fourteen members were present at Glentress Forest when Mr R. Lines and Mr J. Caulfield led us around the forest and explained its many aspects to us. Transport was very kindly supplied by the Forestry Commission.

To the north of the car park ponds were established seven years ago, in an area where Douglas Fir once stood. In the ponds now, there are Brown Trout which attract Heron. Later in the day a Heron was seen flying over the ponds. Around the ponds there were signs of regeneration of Larch and Spruce, the seedlings having to compete with Rose Bay Willowherb. In other places regeneration of Scots Pine was evident.

Roe and Sika Deer inhabit Glentress. The Sika have escaped from Dawyck Estate Deer Park and are more troublesome than the Roe in the forest, in that they damage the bark, causing the wood to be stained. Damage may not be noticed till the tree is felled and cut open. The Sika in the forest are being monitored and the numbers will be severely controlled if need be. The numbers of Roe are controlled, the Rangers culling about 30 per year.

The topic of acid rain arose and Mr Lines explained how the acidity levels in past years could be ascertained. If a bore of the mud is taken, the various layers of siliceous diatoms can be identified and dated. The level of acidity which each species of diatom can tolerate is known. From these details an estimate of past acidity can be calculated and it has been found that until 1750 the acidity was stable. From 1750-1850 the acidity gradually increased and from then onwards there was a rapid increase. Industrial pollution from the Midlands is being blamed.

We passed a young Douglas Fir and tiny specks of waxy threads, containing an aphid, were shown to us. This particular aphid, *Adelges cooleyi*, infests only one particular variety of Douglas Fir, *Psuedotsuga menziesii* var. *viridis*. A state of balance seems to exist between tree and Adelges. This year's tree growth was only half that of last year, perhaps being caused by the aphids sucking at the sap. The tree then becomes less desirable to the insect and their numbers drop. Old trees have fewer Adelges.

Douglas Fir in its native country grows in a climate of wet winters and hot dry summers, where there are often fires. Douglas Fir has very thick bark and in America, where they can be 800 years old, the bark can be an inch thick. This makes them resistant to fire.

Goldcrest and Wren could be heard in the trees. It is the policy of the Forestry Commission to leave dying trees standing, for the use of Woodpeckers, rather than chop them down and tidy them away.

An area of Norway Spruce planted between 1901-05 had an unusually large crop of cones. The hot dry weather of last year (1984) produced just the right conditions for the growing of the flowers. Norway Spruce was first introduced to Britain in 1500. The Sitka Spruce amongst the Norway could easily be picked out by their taller and bluer appearance. The Sitka was introduced a great deal later and can grow on exposed ground. It is capable of carrying on photosynthesis down to a temperature of -4°C. This means the tree can still, at just below freezing, produce food for growth.

White lines at shoulder height on some of the trees are the points where the circumference is measured at regular intervals. The height of the tree is also measured and the rate of growth can then be calculated. Large flaking scales on the bark are characteristic of Sitka. Trees, 60-70 years old, are usually ideal for harvesting. If the trunk is too thick, cutting becomes difficult. The wood is mainly used for house joists and construction work.

Conifer Heart Rot is a fungal disease, dreaded by the foresters. The fungus spores can enter through the roots or in through a wound in the bark. The disease gets to the centre of the trunk and spreads upwards and it may not be noticed until the tree is felled.

On many of the Spruce trees, this year's leading shoot showed tiny branches appearing just below the tip, giving the shoot a knobbly appearance. This phenomenon is known as Lammas Growth. There is steady growth until the end of July when there is a lull, then in August there is a burst of growth producing these small knobbly branches.

Noble Fir, first brought to Britain by Douglas in 1831 and planted to break the monotony of Spruce, can also tolerate exposure and wind. There is a growing demand for Noble Fir as Xmas trees because the needles don't drop off. Japanese Larch tolerates conditions of low nitrogen. In its native land it has adapted to grow on volcanic ash which is low in nitrogen.

We lunched at a spot overlooking the area where Goshawk had nested, but we were not privileged with a sighting. The delicate Oak Fern (*Gymnocarpium dryopteris*) was growing at this spot.

We were then taken to an area of the hillside where there were large patches of heather (*Calluna vulgaris*). The young Spruce trees could scarcely be seen above the heather. The area had been ploughed and planted but the mycorrhizal[1] root system of the heather was in competition with the mycorrhizas of the Spruce and the heather, as it usually does, was winning and checking the growth of the Spruce. Two courses are open, first to spray with 24D which kills the heather and not the Spruce and the second is to apply nitrogen in the form of urea which feeds the trees and allows them to grow up through the heather. Mr Lines thought the second option would be taken.

A large rectangular area of the hillside is the site of experimental trials with Sitka seeds of varying origins. The same selection of seeds are on trial in various locations in Europe.

We would like to express our thanks to Mr Lines and Mr Caulfield.

E. Gillespie

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[1] Mycorrhiza is the term used for the symbiotic association of plant roots with a fungus.

Glen Affric Weekend - 13-16 September 1985

Fourteen members booked in at Cannich for the September weekend, no doubt hoping that there would be a break in the wet weather that had prevailed almost without a break for most of the summer. Those driving north from Edinburgh came through light rain but an unfortunate car load from the Glasgow area had to drive through appalling conditions and torrential rain.

Saturday, 14 September:

The day was spent in Strathfarrar. The forecast of showers, sunny intervals and strong winds was something of an understatement. We drove the 13 miles up the glen, which was looking particularly beautiful in the changing lights of sunshine and rain, and parked in a gale force wind at the end of the public road beside the hydroelectric works at the outlet of Loch Monar. From there we walked along a rough footpath on the north east side of Loch Monar for about 2½ miles where we had a very fine view westward along the loch and over the East Monar Mountains on the north side of the loch. The surface water of the loch was whipped up into white horses except for a small sheltered bay below us where the water was calm.

Returning to the cars was an easier walk with the wind behind us. After lunch we moved down the glen to the shelter of Culligran Wood where we walked beside a particularly attractive part of the river. Peaty water was thundering down a series of waterfalls and the river can seldom be running with a greater volume of water. Prior to the building of hydroelectric stations in Strathfarrar and Glen Affric, the uncontrolled flow of water down these glens led to considerable flooding and damage to farmland in Strathglass.

Fungi were plentiful and many were taken back to the Youth Hostel and laid out for further inspection and identification.

E. Farquharson

Sunday, 15 September:

This day was spent in Glen Affric. Cars were taken 11 miles up to the car park which is delightfully situated amongst mature Scots Pine, at the east end of Loch Affric. After the heavy rain the River Affric was running in spate. Red-breasted Mergansers were seen swimming upstream and it was thought how much easier it would have been for them to fly.

The group started walking along the north side of Loch Affric. Although the weather was mixed, at Affric Lodge the sun came out and rainbows were seen. The sunshine showed Loch Affric at its best, emphasising the red bark of the pines against the blue/green pine needles. A Dipper was seen flitting over the loch and Mistle Thrushes were feeding on rowans. Fungi were plentiful.

Just over a mile along the path a burn which would have normally been stepped across had turned into a torrent which precluded further progress. On the way back to the car park a Common Lizard was found. It had obviously slowed down due to the low temperature. Rushes, grasses and sedges were examined. Viviparous Fescue (*Festuca vivipara*) and Heath Grass (*Sieglingia decumbens*) were of particular interest.

After lunch at the car park, with its attendant flock of Chaffinch, the party walked about 3 miles along the south side of Loch Affric, passing the

Mountain Bothies Association cottage on the north side of the road. The return point gave excellent views across Loch Affric into Coire Leachavie, dominated by the mist enshrouded Mam Sodhail. The party had good views of Sgurr na Lapaich and An Tudair.

Again fungi were plentiful and we were delighted to find *Gomphidius roseus*, which budding mycologists will remember is the attractive red-capped funnel-shaped fungus on the frontispiece of the Collins Guide.

Although many of the passerines had moved to warmer climes there was still plenty to interest the ornithologists. Hooded Crows gave many false alarms but Golden Eagle, Peregrine, Kestrel and Merlin were seen. Robins, Wrens and Tits were active.

A stop was made at the Dog Falls on the return journey to Cannich. Due to the difficult access to the falls, the footpath does not lead to the main fall and so most of the party missed the spectacular view of the cascade in the gorge.

As on the previous night, fungi and other botanical specimens were laid out at the Hostel under the benign eye of the warden.

Although the weather could have been better - an excellent day!

I. McCallum

Monday, 16 September:

Our third day - and rain again.

It was decided to visit Corrimony Chambered Cairn at the western end of Glen Urquhart. This is a passage grave of the period 3000 to 1800 BC and when it was excavated in the early 1950s evidence of a single crouched burial was found, together with a burnt bone pin. A massive, flat, cup-marked stone lies on the side of the cairn near the top and it is thought that this may have been the final roofing slab of the chamber.

Around the cairn is a circle of eleven standing stones.

We spent an interesting half hour scrambling over the cairn and crawling through the passage to the chamber itself, which is about 12 feet in diameter and seven feet high.

By the end of our visit as the weather still showed no sign of improving, plans for a walk over to Tomich were abandoned and we decided to disperse and go our separate ways.

Passing by Strath Mashie on the homeward journey a herd of about 30 Red Deer was spotted grazing only about 100 yards or so from the road: against the hillside their rain-sodden coats looked almost black.

D. Mack

A fungus foray at Monteviot Woodland Centre - 5 October 1985

This joint outing of the ENHS and the BSE took place on a fine sunny Saturday following 24 hours of heavy rain and near gale force winds. One suspected that rather less rain had fallen on Jedburgh than on Edinburgh as, although paths and fields were muddy, the vegetation was much drier than anticipated.

The Woodland Centre is north of Jedburgh close to the A74. There is an attractively laid out building with shop and tearoom and in the grounds are nature trails and a Pinetum.

Mr Stewart Roberts, our leader, took one group to woods near the river while a second group headed up through mixed woodland which included some very fine beeches. The route led up through grassland to the top of Peniel Heugh and the Wellington Monument from where we had a magnificent view over Border country. On the way, Painted Lady butterflies were seen.

Both groups collected until lunchtime and then returned to the Centre where the collections were laid out. Pride of place went to an enormous *Phaeolepiota aurea*. An all white Tricholoma (*T. columbetta*) had been found in the riverside wood, and *Tricholoma atrosquamata* with a greyish fibrillose cap and black-edged grey gills had been found by the other group under beech.

In the afternoon a shorter visit was paid to beech and birch woods at Lanton about a mile away. Most of the finds were duplications of the morning's collections except for *Tricholoma sulphureum* growing under beech.

There was insufficient time to visit the Pinetum. It would be rewarding to visit it in the future as it contains many interesting trees.

E. Farquharson

NOTICES

The Library

Books from the Library, for home reading for for use on field trips, are available to members at Indoor Meetings throughout the winter, or by contacting the Librarian.

A number of books on a wide variety of subjects has been donated to the Library by members. Included in these are more than 50 from the collection of Brenda Gordon, who was a very active member of the Society.

F. Howie

Microscopes

Any member who would like the use of a microscope or stereo-magnifier should apply to:

Miss J. Raeburn
37/2 Dreghorn Loan
Edinburgh EH13 0DF

Grants for Field Courses (Ian Sime Fund)

Members of all ages are reminded that grants are available from the Ian Sime Fund for attendance at Field Courses.

Application for grants should be made to a member of the Sime Committee listed below.

President (ex officio)	Mrs V. McFarland
Hon. Secretary (ex officio)	Mrs C. Stewart
Hon. Treasurer (ex officio)	Mr A. Dickson
Elected member	Mrs E. Farquharson

If at any time more applications are received than the Fund can handle, preference will be given to younger members.

Telescope

Members are reminded that the Society owns a telescope with stand.

'Bird Walker'

A 'bird walker' has been given to the Society. It consists of cassettes covering various habitats which can be played in the field to help with the identification of bird song. It is also useful for playing indoors.

Any member who would like to borrow the telescope and/or 'bird walker' should apply to:

Mr C. Rawcliffe
35 Comely Bank Road
Edinburgh EH14 1DS

EXCURSION COMMITTEE

Mrs B. Gill
75 Priestfield Road
Edinburgh EH16 5JD

Tel: 031-667 2427

Mrs E. Gillespie
11 Drylaw Crescent
Edinburgh EH4 2AU

Tel: 031-332 3214

Mrs J. Lyburn
4 Cumlodden Avenue
Edinburgh EH12 6DR

Tel: 031-337 7580

Mr G. McDougall
27 Cherry Avenue
Bathgate EH48 1NB

Tel: 51 56621

Miss E. O'Donnell
22 Jordan Lane
Edinburgh EH10 4QZ

Tel: 031-447 2799

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42 Gardiner Road
Edinburgh EH4 3RN

Tel: 031-332 4861

THE

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EXCURSION COMMITTEE *(back cover)*

NOTE TO CONTRIBUTORS

It would ease production of the Journal if contributors would adopt as many as possible of these guide-lines:

- type or write clearly on one side of paper
- use A4 size paper
- leave alternate lines blank for editing
- leave one clear margin
- give English name of subject followed by Latin name
- identify location of excursions by place names or OS map reference

EDITORIAL

Of the numerous individuals who contribute their time and effort to the functioning of the Society the Excursion Committee have been particularly active. Both Saturday and Wednesday evening field excursions were generally well attended in 1986 and apart from one or two lapses the weather was kind to us on these occasions.

A successful innovation this year was the extension of the usual spring and autumn weekend excursions into longer stays at field study centres. A week in North Yorkshire in June and a few days on Islay in October are reported separately and these reports reflect the pleasure and interest generated amongst participants.

An article by Dr John Sheldon on mineral extraction in the Lothians is reassuring to us all as we currently see heaps of spoil appearing in various localities. The long term prospect of the effect of all this for wildlife is reasonable and there is even scope for some beneficial results.

Articles by David Jones and by Betty and Bob Smith allow us to share their overseas excursions to Spitzbergen and France, whilst on the home front the range of members' interests is reflected by the notes on earwigs, badgers, spiders and swallows.

Ena Gillespie provides information on the Society's acquisition of a study room in Donaldsons School and members are invited to make use of this facility.

The Journal Committee thanks all contributors to the Journal whether it be in the form of reports on outings, observations, notes or articles.

The Society was diminished by the death of Janet Raeburn in April. An appreciation is presented of an extremely popular former President and recent Honorary President of the Society.

The Late Miss Janet K. Raeburn - President 1979-1982

An Appreciation

After a very short illness, Miss Janet Raeburn, a former President of the Edinburgh Natural History Society, died in April 1986. She will be remembered by members of the Society in many ways but especially as a keen botanist; she had the ability to explain botany and its related subjects with an enviable clarity to non-specialist members.

Janet was born in Maxwelltown, near Dumfries, but spent most of her childhood days in the South of England and Humberside. She graduated MA in biology at Cambridge and was awarded a scholarship to travel in America. She was a teacher of biology for 20 years in the Home Counties before becoming Headmistress at Westcliff School for Girls (one of the largest grammar schools in England) for 20 years. Having spent many happy holidays with her family in Balerno, Janet decided to retire to this area in 1971. She joined the Society in 1972, was elected to the Council in 1974 and became President in 1979. Janet was editor of the Journal from 1974 and sustained and enhanced its quality and standard of excellence.

Most members will know that Janet was the inspiration and driving force behind the Society's book "Edinburgh's Countryside". Her enthusiasm encouraged many members to contribute towards the publication, but, without Janet, it might not have reached fruition. She had previous experience of producing a book; she collaborated with her brother in the late 1930s to write "Anatomy, Physiology and Hygiene" which is still in print and in use in schools today.

As a tribute to her many services to the Society and to her sound judgement, Janet was made an Honorary President in 1984. She will be greatly missed by all of us, but our pride and gratitude for her achievements, and our memories of her charm and friendship remain.

THE GUNN PHOTOGRAPHIC COMPETITION - 1986

This is the fourth year of this competition. Entries were at the same level as last year with a total entry of 18. The judge was Mr Gordon Finnie.

RESULTS

PRINT SECTION

1st	Kathleen Manson "Kingfisher"
2nd	May Hoy "Early Morning"
3rd	Duncan Gill "Ringlet Butterfly"

SLIDE SECTION

1st	Ena Gillespie *"Enallagma cyathigerum"*
2nd	Claire Ressel "Burnet Moth"
3rd	Karen Cleland "Oystercatcher Incubating Eggs"

These photographs are reproduced on pages 6 and 7.

WINTER INDOOR MEETINGS - 1986

January: For a second year, the Society had the pleasure of seeing slides presented by Mr Duncan McEwan from the Natural History section of the 18th Paisley International Exhibition of Colour Slide Photography. Many aspects of wild life were presented and the meeting was impressed by the quality and diversity of the slides shown.

February: Mr John Cuthbert, Wildlife Officer at the Department of Agriculture and Fisheries, East Craigs, spoke on 'Pests, the Other Side of Wildlife'. He began his talk by defining a pest as a bird or animal which is in conflict with Man and startled the audience by showing his first four pests as being blue tits, skylarks, linnets and kingfishers and elaborated as to why this was so.

He went on to describe cases where the animals and birds were, in the main, harmless but could on occasions be a nuisance to Man. Good examples were the Greylags of Duddingston compared with the flock of two and a half thousand which can descend on a wheat field, and the Whooper swans which were shown to have spoilt a field of turnips.

Rooks feed on grubs and grain and can spoil a crop of winter barley and the good they do is outweighed by the loss caused. Similarly, wood pigeons can cause damage to crops, especially to turnip tops, in summer.

Coypu, an introduced animal, can be a pest in aquatic situations but this could be exterminated if enough money was spent on the project.

The Isle of May, once known as the 'Jewel of the Forth', was later described as a 'Gull Slum'. A picture was shown of barren ground when thirty thousand gulls were in residence. After a cull when the gull population was reduced to about three thousand the vegetation returned and a slide was shown of the same area covered with flowering Thrift.

Mr Cuthbert went on to discuss how carrion crows attack sheep and how even the beautiful mute swan can cause problems when they invade cultivated fields. He pointed out that the fox was the main vector of rabies in Europe.

We were again startled as the osprey, peregrine and otter were named as pests which come into conflict with fish farmers and the talk was illustrated throughout by beautiful slides.

March: Mr W. Van Warmelo introduced himself by saying that he was not a specialist in any branch of natural history but a keen amateur who had spent three years in Cyprus and had been blessed with time and interest to explore the Island and study its wildlife.

Mr Warmelo showed maps of the island and we were able to get an overall picture of its physical features. He also told us of its history from the prehistoric Neolithic peoples, through the Bronze Age to the Greeks and Romans who left behind many reminders of their occupancy. After that there was the Byzantine influence. At present the Greek and Turkish populations are separated by the 'Green Line' and each community keeps very much to themselves.

Because of the type of soil modern methods of agriculture cannot be used. There is much terracing and the wooden plough pulled by oxen is used today as it was four hundred years ago. Olives are the main crop and the pods and seeds from the Carob tree produce protein for man and beast.

In Cyprus there are no large wild animals but there are many moufflon, hedgehogs, gecko and other lizards as well as blunt-nosed vipers and tree frogs. We were shown slides of butterflies and there was a fascinating account of how the cunning digger-wasp digs a hole in which it places a paralysed caterpillar before laying its egg.

Many goats are kept and because of this the countryside is very bare. However at certain times there are many wild flowers including interesting orchids. The salt lake at Krotiri is a very good place for migrating birds including flamingos and on the cliffs, vultures.

Formerly, many of the small birds were hunted and netted indiscriminately but the Government is now enforcing laws against this and, on the whole, the people are becoming more conservation conscious.

April: Members' Night. Mr Gill showed the prize-winning slides from the Gunn Photographic Competition and five other members spoke on varying subjects. They were:

Mrs Elizabeth Farquharson on 'Badgers'. She told of the survey she had made in order to recommend where badger crossings should be put in the new motorway between Sighthill and Newbridge. She also gave a short and interesting talk on the history of badgers in Scotland and the places frequented by them within the City boundary.

Mr Donald Manson showed slides taken in the summer of 1983 while on holiday between Gairloch and Ullapool. These slides covered a great variety of subjects and we were made to appreciate how rich that area is in wildlife from the small damselflies to the large common seal.

Miss Jackie Muscott showed slides taken last July in the Hebrides and although she had very bad weather she had seen and photographed many interesting plants.

Mrs Ena Gillespie chose 'Local Moths' for her subject and showed an excellent collection of slides dealing with the subject.

Mr Alex Clelland chose 'Bird Photography' and gave a most interesting account, illustrated by very professional slides of birds both at and away from the nest.

October: Mr and Mrs Bob Smith, who are amongst the longest standing members of the Society, gave an account of a recent holiday tour which they had taken to Israel. Mrs Smith began by giving the background to the tour and told us about the habitats and animals, leaving the description of the birds to her husband. Among the places visited were Tel Aviv, where the tour started and finished, Mt Herman, the Golan Heights, the Sea of Galilee and the Dead Sea, and in the south, Eilat and then across the desert to Jerusalem. Mrs Smith described the wadis and the plants found there which are so well adapted to withstand drought conditions. Among the animals seen were the camel, golden spiney mouse, ibex, fox and the small rock hyrax which feeds on seeds and seedpods and is the nearest known relative of the elephant. There are many types of lizards and at Eilat there is an underwater observatory where beautiful coloured fish can be seen in their natural setting. Butterflies and moths and dragonflies were found in very dry and unexpected places and wasps were observed taking caterpillars to the holes where they lay their eggs in order to provide food for the young on hatching.

Mr Smith told us about the birds seen. Two hundred and eleven species had been spotted, though due to weather conditions, the great migration of birds of prey had not been observed. However, there was much of great interest, including the Arabian Babbler with its 'caste system', different kinds of eagles, pelicans, storks and black-backed stilts, to mention just a few.

November: Mr Jim Stevenson, Warden of the RSPB Reserve at Vane Farm told us about the trip that he and his family had made during the summer to the Pyrenees. They camped at Luz San Saveur for the first part of the tour and were able to visit the Museum of Pre-History at Les Eyzies and see the wall paintings in caves nearby. The farmers of the area have to diversify as their farms are small and hilly and tourism helps them greatly. In each valley there seem to be different habitats and the 'Valley of the Nightingales' was specially rewarding. The rock formation in the mountains was interesting as was the waterfall at Cirque d'Gavarny near the Spanish Pyrenees. Mr Stevenson described the 'pecking order' of birds of prey as seen in the mountains and explained how each species was adapted to make use of different parts of the carcass, from those which fed on the soft parts to those with very strong beaks which were able to make use of the bones left by the others.

Mrs Stevenson took turns with her husband and described their experiences with great humour - even breaking into song on occasions which added variety to a most enjoyable evening.

December: Mr Andrew Panter from the Nature Conservancy Council in the Borders and who is also chairman of the Border Bat Group addressed the meeting on 'Bats'. He started his talk by relating the small number of fifteen British species to nine hundred worldwide. All the British were illustrated with excellent slides and were accompanied by explanations of their salient features, habitat preferences and distribution. Only a third of the British species are likely to be found in Scotland and Mr Panter dealt with those in great detail.

It was a surprise to hear that Scottish churches are not particularly popular with the bat population, perhaps by being too draughty, and belies the saying, 'Bats in the Belfry', whereas new houses under twenty years old are frequently used. Winter hibernation sites seem to be in short supply in Scotland and it is thought that many bats may fly south for the winter.

All fifteen species have been included for protection in the Wildlife and Countryside Act because of decreasing numbers, even of the commonest species such as the Pipistrelle. House owners are to be encouraged to be more tolerant and timber treatment firms are being persuaded to use less toxic chemicals. Grills have been installed across cave mouths to stop the disturbance which can cause the death of hibernating bats. Bat boxes, ringing and radio tracking are all used to increase knowledge of bat movements.

To conclude his lecture on a subject which was new to the Society, Mr Panter played recordings of bat sounds.

S. Litteljohn

THE GUNN PHOTOGRAPHIC COMPETITION - 1986

Gunn Photographic Competition 1986

Print Entries

First Place

Kingfisher

by

K. Manson

Second Place

Early Morning

by

M. Hoy

Third Place

Ringlet Butterfly

by

D. Gill

Gunn Photographic Competition 1986

Slide Entries

First Place

Enallagma cyathigerum

by

E. Gillespie

Second Place

Burnet Moth

by

C. Ressel

Third Place

Oystercatcher Incubating Eggs

by

K. Cleland

ENHS STUDY ROOM

For several years the possessions of the ENHS were stored at the old Broughton Secondary School. Early in 1984 the building was scheduled for renovation and alternative accommodation became necessary. For a time we had to store our possessions in the homes of various members. In response to an appeal to the membership, it was suggested that we should contact Mr Miller, Principal of Donaldson's School for the Deaf, as to the possibility of being given storage space. This we did and Mr Miller kindly gave us the use of a room where we could store our chattels and we moved in during the summer of 1985. After further discussions with Mr Miller, we were given a table, some chairs and two cupboards to furnish the room and he also gave permission to hold study sessions.

We now store there low power stereo microscopes and high power microscopes and a good collection of reference books. Most of the botany books were bequeathed to the Society by the late Miss Janet Raeburn. More books and equipment will be bought as the need arises.

On ten evenings during the summer of 1986, 20 members came and made use of the facilities to study their chosen subjects. Three evenings are arranged for the winter programme when guidance will be given on identification of mosses, conifers and fungi by three of our members who will share their expertise with us.

Sessions at the study room are very informal, it is very much a members' room where 'enjoyment' is the key word. To those members who have not used a microscope, don't be afraid, do not be put off, someone will be there to show you how to use it. To see things in such detail as you have not seen before can be most rewarding - give it a try!

E. Gillespie

LOTHIAN'S HOLES

From Dunbar to Fauldhouse, the Lothian countryside is becoming increasingly pock-marked with holes, many of a considerable size. Certainly no-one driving along the A1 in East Lothian will have failed to have noticed the total upheaval to the north of Tranent where open-cast coal extraction is taking place, or east of Dunbar where limestone has been quarried for many years for the production of cement and which has recently even necessitated a re-alignment of the trunk road.

The upheaval seems total but fortunately most of these holes are actually relatively short-term affairs, particularly where a coal seam is being plundered, since eventually they are filled in and everything supposedly returns to normal.

In every case, mineral extraction is the objective. In West Lothian holes appear for coal, sand and fire clay extraction. In Midlothian it is also sand, while in East Lothian it is principally coal and limestone. Coal in particular is becoming a major reason for hole digging, to get at beds which are more economic to get at in this way than to deep mine. Whatever the objective the operation is clearly quite devastating to the environment. However, whereas mines might seem more environmentally sympathetic we have inherited from deep mining a lot of bings and associated derelict land. Open-cast operations can thus be argued to be much less of a problem since once the mineral has been extracted everything is pushed back into the hole, and planning conditions that apply today ensure that restoration of the site then takes place.

Fortunately, no open-cast site has yet involved nationally or locally important wildlife sites and, when it takes place in some of the more impoverished countryside areas, such as in the West Lothian moorlands, few people are really concerned anyway.

The most difficult hole placing has perhaps been on the lowland plain of East Lothian. This has not been for any obvious wildlife reason but because the digging has taken place in land of the highest agricultural quality. The very special resource here is the soil which is highly fertile and easily managed. It is a resource which has taken a long time in the making, cannot be recreated, and is thus too precious to lose.

Too often in the past soil has just been considered as 'dirt' which engineers might move around at will, in the most unsympathetic way and under the most unsuitable of conditions, getting it mixed up with subsoil, or even losing it. It is,however, a complex system of inorganic and living things too precious to be treated in this way. Its fertility depends on organic residues created by micro-organisms and invertebrates, and this, plus the clays, silts and mineral particles, combine to make soil. In East Lothian the combination has produced a growing medium of the highest quality in the region for which its agricultural productivity is renowned.

As rehabilitation standards have improved, since the experimental attempts during the war years, so has the handling of soil. In such operations great care has to be taken to strip off the topsoil and to store it separately from the subsoil and bedrock. On small sites all the top soil may be moved in one operation but on large sites stripping is progressive in advance of the extraction. Care is also taken to store the subsoil separately. There is then the problem of storage. If just left in a heap much of the soil is going to degenerate in its quality, especially since often such heaps can be lying around for many years before the soil is replaced on the reinstated ground. Topsoil should be stored in a manner that gives maximum surface area, and if large quantities are involved then there is every reason to deposit it in such a way that although in a 'stored' state the mounds can still be cropped. Otherwise they are grassed down but in no case is heavy machinery allowed to run over the mounds until they are lifted for respreading.

There are now many guidelines on how to handle soil in such operations but even if followed it can still take many years to rebuild its fertility and living components when returned to the restored and levelled site.

Once mineral extraction has ceased the rock and debris is moved back into the hole and consolidated. All levelling and final regrading is done so that when subsoil and topsoil are replaced, and after allowing for settlement, the site conforms with the surrounding landscape contours. Before the subsoil is replaced the infill is deep-ripped by machines, to relieve compaction and provide drainage. The subsoil is then spread using scrapes and finally the topsoil is returned.

These operations are carried out during dry weather and every care is taken to ensure that there is no mixing of debris, subsoil and topsoil during the restoration. Clearly the success of the work depends on supervision and if problems arise later, such as drainage, then the reinstatement of the substrates has to be faulted since the final stage of restoration, the planting of grass or trees and a successful performance, depends upon good site restoration.

Once the topsoil is in place it is cultivated and limed for seeding at the appropriate time. Normally a reclamation grass mixture is first sowed down, with clovers being an important constituent. To start with the soil may well be acid, nutrient deficient and lacking in physical structure. As a consequence, it has to be managed with care and a generous fertiliser programme is necessary to sustain the first crops. Fertilisers are often applied at twice the amounts normally used on undisturbed land and this treatment may well continue after the first five year period.

The utilisation of the crops involves careful control of grazing to prevent overstocking and if hay and silage is removed the fertiliser return must be carefully calculated.

In an arable situation, as in East Lothian, it will be some time before nutrient levels can be returned for growing cereals but in time the renewed fertility should make the growing of cereals again possible. However, it is not usual for open-cast operations to take place beneath such high quality land and in many ways the restoration will be a new challenge for those involved.

Because of the location of open-cast sites the impact on wildlife has been relatively small. A few trees and largely degraded hedgerows have been lost in the lowlands while on the moors impoverished and often badly drained grassland has disappeared.

The positive aspect of open-cast operations is that as well as returning the ground to an agriculturally productive status which is often greater than in its original condition, there is every opportunity for the reinstatement to involve the planting of hedges, small woodlands, and shelter belts. In some cases, where extraction is going to take many years, tree belts may be planted around sites before operations begin in order to screen the works. Here a wide range of broad-leaved species can be planted on the undisturbed ground.

New hedges are normally of hawthorn which are protected by fencing from both stock and rabbits. Where trees are planted alder is often a favoured species because, like clover, it fixes nitrogen and thus grows well on impoverished sites without fertiliser addition. Sycamore is another successful species under these conditions, unlike our native woodland species which tend to grow slowly and develop a poor form. Similarly, several exotic pine species establish well and grow moderately fast.

In the design of shelter belts a mixture of broad-leaved and conifer species are planted and although many are not of the greatest wildlife value, the use of alder and the planting of hawthorn on the edges can provide in time, good wildlife habitats.

In West Lothian, in particular, land of poor agricultural and wildlife quality can be transformed into something far more productive and already there are examples of this in the Fauldhouse and Harthill areas.

Open-cast operations are relatively short-term events and eventually the land is returned to its former use. The techniques for restoration have improved quite dramatically in recent years and provided a positive approach is taken by operators there are long-term environmental benefits arising from what might appear in the short term, to be environmentally disastrous.

J.C. Sheldon
Regional Ecologist

RESERVE MANAGEMENT,

ITS OPPORTUNITIES, PROBLEMS AND SOME SOLUTIONS

Milkhall Pond, the venue for one of our field meetings (28 May 1986), gave our members the chance to assess the value and potential of this Scottish Wildlife Trust's reserve and also to savour the challenges of management.

The reservoir, originally created to supply water for a mill in Penicuik, is fed from underground springs. Formerly the outflow was controlled by a sluice and pipes led the water down to Penicuik. After the mill closed the reservoir fell into disuse and before the SWT bought it in 1977 the sluice mechanism had rusted and the pipes were broken. The outflow then led from an upstanding pipe in the reservoir, out beneath the embankment and into the marshy ground beyond and thence to the adjacent Lead Burn.

Beyond this area of marsh the reserve includes an old Beech/Pine shelter belt and grassland up to the former railway line. Until the SWT took control the site was grazed by horses. In a few years the vegetation changed dramatically with the cessation of grazing. The herb-rich pasture all but disappeared to be replaced by coarse grasses, Rosebay Willowherb and Reed Canary Grass. A programme of tree-planting has been carried out with the object of eventually depressing this vegetation. Newly-planted trees need weeding for several years until tall enough to dominate the surrounding vegetation. Even finding them amongst the tall herbage poses problems. To add to our troubles sheep repeatedly broke through the fence and we discovered that they regard Scots Pine as a special treat! Replacement plantings have been carried out. Particularly vulnerable trees (oaks) are given individual protection and the fence has been reinforced along its entire length with chain-link fencing.

Occasionally the water level in the reservoir rose alarmingly causing concern to the occupants of the adjacent cottages. Then, just as suddenly, it would fall again to normal. The mystery was solved when it was discovered that freshwater sponges were growing in the pipe and periodically blocking it. Plans to alter the system and, at the same time to create new ponds, have been implemented. Now the pipe has been completely sealed and the embankment breached to provide a natural overflow. This spillway feeds a series of four new ponds which have been dug out and banked up in the marshy area. Turves to form the outer walls and soil to pack the centre proved a good watertight bank. Leaks however occurred when the ponds filled up. Digging to find the leaks revealed old vole tunnels in the ground that had previously been above water-level and these had to be blocked. The newly created ponds varied in depth and all had deep and shallow areas. Together they provide a water-surface area of over 500 sq yds. No aquatic plants have been introduced. Seeds and parts of plants are washed in from the main reservoir and from the Lead Burn which in spate has a rise of 5 ft and floods into the middle pond and right over the bottom pond. Shortly after their formation, in the good summer of 1984, the damselflies of the main reservoir colonised the ponds and two dragonfly species, one a newcomer to the reserve, were seen egg-laying in one of them.

The bottom pond with its small island is surrounded with Reed Canary Grass. It has been colonised by the submerged aquatics, Water Starwort and Canadian Pondweed, the floating-leaved Flote Grass and the emergent Branched Bur-reed. Whilst submerged, floating and emergent plants are all essential in any good pond for invertebrates such as dragonflies, some open water is necessary too. Emergents, rooted in the bottom mud, thrive in shallow water. By this year the Branched Bur-reed and the Reed Canary Grass practically filled the pond with Flote-grass eagerly stretching out in the free-for-all.

The rapidity of this colonisation was completely unexpected as the water in the affected areas was over 2 ft deep. Left to its own devices the pond would have developed to marsh and then to dry land. Drastic measures were called for. The water level was dropped and the offending plants dug out by the roots. Much muck-raking followed and the banks were built up so that on refilling the pond has been deepened by a foot. Hopefully that will be enough to depress the exuberance of the emergents and a more stable ecosystem will develop.

The middle pond, the deepest, also has a tiny island. This pond, too, is completely surrounded by Reed Canary Grass. A nice growth of a floating-leaved Potamogeton species has developed. Reeed Canary Grass in too deep conditions is not firmly rooted and can be easily raked out.

The top pond has all but disappeared under a heavy growth of sedges and rushes. Open water remains only in the deepest parts. During the coming year the management committee will consider ways of improving the situation.

The overflow pond, the smallest, serves as a catchment area for silt and vegetation washed in over the spillway from the reservoir. The drop from spillway to overflow pond hopefully will be sufficient to deter sticklebacks ascending into the reservoir. An uncommon aquatic, Wood Club-rush occurs in the immediate area of marsh and has covered the banking of this pond. It does not appear to thrive in the deeper water that the Branched Bur-reed enjoys so much and so may prove a more suitable emergent for the ponds.

The late Dr Fairbairn who was a former president of our Society and a retired forester, rented a piece of ground beside the Lead Burn and planted it with trees. Shortly after it was planted some of the ENHS visited it. I remember expressing disappointement at the large number of Spruces, to have it explained that they were there as nurse trees to shelter the hard-woods until they were well enough grown. When the SWT acquired Milkhall, Dr Fairbairn expressed the hope that his wood might some day link up with the reserve.

After Dr Fairbairn's death we learned that the landowner had such a high regard for him that he wished his wood to be preserved as a memorial but did not know how best to go about it. On an informal basis the Milkhall management committee has gladly undertaken to look after the Fairbairn Wood and so far some of the nurse conifers have been felled allowing light in to the hard-woods.

On an adjacent slope across the burn, where the ground is too wet and too steep for farm machinery, the owner planted a mixture of Spruce and hard-woods several years ago. From a combination of adverse exposure, sheep and rabbits many of the trees have died. This Triangle Wood is now being managed along with the Fairbairn Wood and has been infilled with a mixture of Scots Pine and hard-woods.

Reed Canary Grass and Rosebay Willowherb cover the reservoir embankment bordering the Lead Burn. Here trees cannot be planted lest their penetrating roots cause leakage from the reservoir. Last year we cut a swathe to provide a path right round to the overflow. Reed Canary Grass grows fast and this year two cuts by petrol-driven strimmer along the embankment and round one side of the new ponds has made access much easier. The resultant 'glades' and short turf have been much appreciated by damselflies and toadlings! Mallard, too, like an area of short grass where they can haul out.

Even in severe weather conditions the main reservoir does not completely ice over thanks to the springs that feed it. Little Grebe, Coot and Moorhen take advantage of this to overwinter. Whooper Swans are regular winter visitors. In summer Mallard, Coot, Moorhen and Little Grebe regularly breed successfully and Tufted Duck do so occasionally. They are all very vulnerable to Mink which keep coming up the Lead Burn. Prior to the SWT acquiring the reserve Mink were trapped there on a regular basis. When the SWT took over the reserve all trapping was stopped. All the breeding ducks and Little Grebes disappeared. After a year or two trapping was resumed and the situation was restored to normal. It is absolutely essential to keep trapping Mink if we are to have the pleasure of having these birds breeding on the reserve.

Reserve management then is not simply a case of putting up a notice and leaving Nature to itself. It involves an ever-increasing understanding of Nature and a great deal of cooperative, hard but most satisfying work.

Elizabeth M. Smith

SUMMER IN SPITZBERGEN

This year, one exciting afternoon in July, I was in a plane from Norway that swung down through a steep-sided valley, passed above the settlement of Longyearbyen and came to rest on the runway next to the shore of the Isfjiord. I had reached Spitzbergen at last.

The islands lie far to the north of Norway, no more than 600 miles from the North Pole, but have, despite their geographical position, a mild summer climate. A coal-mining industry is run quite amicably by Norwegians and Russians and West Spitzbergen is a mecca for bird-watchers, with extensive coastal colonies of sea-birds.

The Isfjiord is the outermost part of a system which practically cuts the island of West Spitzbergen in two. The expedition I joined was due to set off from the seaward end of a glacier on the north side of the Isfjiord and cross by means of snowfields and other glaciers to Ny Alesund on the Kongsfjiord, some 70 km to the north-east.

We were 'abandoned' with our equipment and were then cut off from contact with the rest of the world for about 10 days until we reached Ny Alesund. We had all come equipped with cross-country skis, rations for 12 days and some reserves; we had tents, primus stoves and cooking pots and plastic sledges (pulkas) on which to load the gear that we couldn't carry in our rucksacks. A waist-belt enabled us to tow the pulka behind us, uphill and on the level. Skiing downhill with the pulka 'snapping at your heels' had to be learned the hard way.

We were able to pitch our tents on snow and this could be moulded into a fairly comfortable bed. Karrimats insulated us from the ground beneath and despite the high latitude it was unexpectedly warm when the sun was shining, as it often did - sometimes all through the night. On two occasions the tent was so warm that I slept on top of my sleeping bag and to my continuing surprise, at our highest camp some 2000 ft above sea-level, three of us stripped off to the waist to sunbathe. The clarity of the air and the frequent absence of wind were important factors in the warmth and power of the sun. The clarity made distant peaks appear no more than a short walk away but in reality they were sometimes more than a day's skiing away.

The excellent weather had other effects, especially on the snow conditions, and hurried on the thaw too quickly. As a result we found a number of beautifully blue melt-water streams and lakes on our route. Another result was that some miles from the end of the Kongswegan glacier we ran out of snow and this meant travelling on foot over rough ice, each pulling our loaded pulka. The ice was considerably pitted and rough, with many pebbles acting as heat focusing spots, which created the pits responsible for roughening the surface. Falls were to be avoided and gloves had to be worn all the time because the rough surface of the ice was extremely sharp and severe cuts and grazes were the likely result of any fall.

Luckily, falls and injuries were minor and we were able to enjoy a fairly relaxed crossing, although wildlife was not a conspicuous part of it and much of the natural history was concentrated into the last few days by the fjiordside. While on the glacier we had a few visits from a single Ivory Gull (*Pagophila eburnea*) which kept a discreet distance from our camps. We saw only the footprints of Arctic Fox very close to the highest camp and wild flowers were restricted to the occasional moraine exposed by the melting snows. One day's climbing of a mountain beside the glacier showed us a remarkable collection of fossil corals and ammonites and of course the folding, layering and irregular weathering of the peaks was fascinating. We visited one freshwater lake below this mountain and I tried hard to find some living animals in it, but with the water temperature below 2°C it wasn't surprising that I failed.

When we came to the end of the glacier crossing, descending to the end of the moraine, there was no question but that we were 'down to earth' with a vengeance - staggering through a slurry of melting ice, silt and gravel. Miniature icebergs beached on the shore had been carved by the act of melting into bizarre shapes. Ringed Seals (*Phoca hispida*) were often visible, some basking idly on ice-floes that were drifting down the fjiord, Eider Duck (*Somateria mollissima*) were paddling about in the bay and all this scene was overlooked by the majesty of the shattered pile of white, ice-blue and brown material forming the glacier foot. There was an almost continual rumbling like distant thunder, as sections of the glacier collapsed, invariably followed a few minutes layer by miniature tidal waves breaking on the beach beside our camp. Noises such as these were something that we had to get used to again after the incredible silence of the upper snowfields. Up there, there was no wind, no animals and, if we were quiet, literally nothing to be heard but the pulsing of one's own blood.

How different from this was our visit to Ny Alesund. We had to cross an area of tundra just outside the settlement and soon discovered that it was the nesting site of screaming Arctic Terns (*Sterna paradisea*). I have known of birds 'bouncing' people who approached too near their nests, but these birds drove at you with their sharp bills and pecked sufficiently hard to draw blood. It became essential either to withdraw or to have the protection of a thick bonnet complete with large bobble. Alternatively, one had to hold a stick well up above one's head to keep them at a reasonable distance. The open tundra was furnished with a carpet of Mountain Avens (*Dryas octopetala*), Purple Saxifrage (*Saxifraga oppositifolia*) and Arctic Bell-heather (*Cassiope tetragona*), together with the Svalbard Poppy (*Papaver dahlianum*) and one of the Louseworts (*Pedicularis hirsuta*). I also found a gully, one bank of which was covered with a fantastic patchwork of tiny plants, mostly no bigger than a 50 pence piece. Without listing them all, I could mention three or four species of Saxifrage, some Whitlow-grasses (*Draba* spp.), Purplish Braya (*Braya purpurescens*), Pigmy buttercup (*Ranunculus pygmaeus*), Moss Campion (*Silene acaulis*), Mouse-ears and Chickweeds (*Cerastium* and *Stellaria* spp.), Sandwort (*Arenaria* sp.), Willows (*Salix* spp.), Knotweed (*Polygonum* sp.) and numerous others.

Wandering further afield on the tundra, I disturbed a nesting Arctic Skua (*Stercorarius parasiticus*) and found it much more amenable to my presence and to being photographed so, unlike my meeting with the Terns, we parted with mutal respect.

The final day brought a true appreciation of the marvel and majesty of Spitzbergen; our return to Longyearbyen was by helicopter. The cloud base lifted just before we started our journey and the pilot took us back overland, through what appeared to be quite narrow, rocky-sided defiles, over lakes, glaciers and snowfields and, as a result, we had some marvellous sights of the full physical make-up of the island and finished with views of our original camp-sites. We were rather horrified to see the incredible number of crevasses that we had crossed, quite ignorant of their presence, frequency and apparent depth. We were lucky not to have been a few days later or our task would have been difficult if not impossible.

Our return to the delights of civilisation in Longyearbyen was directed mainly towards food and drink - there is one very stylish restaurant there - but some two or three days passed once I got home before I stopped feeling almost permanently hungry - fresh air and exercise had taken its toll despite adequate feeding - and I certainly considered it worth any lost calories to have seen Spitzbergen 'in the flesh' at last. It has made me determined that somehow, sometime, I shall return.

D.H. Jones

A TASTE OF FRANCE

We landed at Cherbourg in the early hours of 2 August, lingered until daylight, then set off through a torrential thunderstorm lasting some four hours. We emerged out of it as from a time machine which had carried us back 50 years to a forgotten countryside. Gone were the ugly wire fences, the miserable manicured hedges, the herbicised barren grass fields and verges. Instead there were tiny fields enclosed by hedges of hawthorn, blackthorn and wild rose impenetrably intertwined and growing naturally thick and high. The pastures were full of wild flowers and the cultivated fields had a broad weedy verge round the hedgerows. There were innumerable cows but sheep, the 'curse of the Highlands' were completely absent.

We finally arrived at La Brenne in Central France, an area of dozens of small 'étangs' which had been dug out many years ago for mineral extraction. After our disastrous Scottish butterfly summer we revelled in the colours and movement of countless butterflies of variety unparalleled up here. The Small Heaths and Meadow Browns were outnumbered by hordes of Gatekeepers. Marbled Whites flitted in the clearings. The bright yellow of sailing Brimstones vanished when they settled, to be replaced by the pale green of closed underwings. The orange-yellow wings of Clouded Yellows were set off by their dark edges. We saw only one Swallowtail but dozens of the more southerly Scarce Swallowtail, a superb beast with creamy-white ground colour, tiger-striped with broad black across the wings, and long streamer tails. They have a peculiar back-to-front appearance with the prominent black stripes leading from the curved front wings narrowing and pointing to the blue eye spots at the end of the rear wings and their long antennae-like tail streamers. This is obviously designed to confuse predators and seems to work as very few butterflies retained both tail streamers and many had none at all.

The hordes of small butterflies were much more difficult but we managed to identify Mazarine Blues among the Common Blues and also the beautiful Glanville Fritillary. After an hour or two with these it was a relief to get back to the unmistakable beauty of Red, and White, Admirals.

The first birds to catch the eye were the raptors. Buzzards were common particularly in the north but further south we saw far more Honey Buzzards, our attention being drawn by the quite distinctive 'mewing' call of the fledged young birds. There were lots of Black Kites and in the valleys below the Massif Centrale the even more dashing Red Kites. At one lunch stop as we watched a Marsh Harrier sailing over an étang there was the excited alarming squawk of Starlings as a small party hurtled into a hedge beside our van. As the door was opening to investigate, a Sparrowhawk landed on a post 6 ft away before promptly departing. Had the Starlings elected to seek refuge beside us as the area least likely to be favoured by a hawk?

There were Stonechats and Red-backed Shrikes in the scrublands and lots of Hoopoes including a party of five that chased and displayed along a high hedge with open crests and glorious black and white wings in a grand abandon of colour. Around the Brenne, Whiskered Terns were always obvious with the fledged young standing on posts out on the marshes and the black-capped white-cheeked adults diving for fish like a Common Tern. The other two Marsh Terns (Black- and White-winged Black) both feed by picking food from the surface of the water.

The étangs were a mecca for grebes mainly Great Crested and Little, but we saw the occasional Black-necked. Purple and Common Herons abounded but the small birds had gone quiet and secretive. A glimpse of a Great Reed Warbler and a nice close-up view of a Nightingale did not compensate for the complete absence of Golden Orioles which had been reported as abundant and obvious in July.

The vast number of small lakes and the hot sunshine make this a paradise for dragonflies - our primary interest on this trip. About half of the 100 species recorded in France have been seen at La Brenne but some of these do not breed and for the 'spring' species the season would be over. Still this left a lot of scope for beginners!

To identify most dragonflies it is essential to catch them. We saw five species of the small blue-black damselflies and four of the green Lestes damsels, most of them not too difficult to net. But the larger dragons, extremely active in the heat, proved more difficult to net. Some such as the handsome blue-abdomened Emperor and the superb *Aeshna grandis* (with shiny orange-red wings and blue-spotted nigger-brown abdomen) breed in England but there were many unknowns to ponder over before releasing them.

At one tiny pond with only nine species (the Lothians have a total of eight) we were intrigued by the never ending procession of paired *Sympetrum sanguineum* (a medium sized all bright-red dragonfly) which flew over our heads to an adjacent area of sands. These were all coming from a large étang nearby and provided a graphic illustration of the vast numbers which breed in the area. Each pair would spend perhaps an hour away from the water before the female flew back to lay her eggs.

After a week and 19 odonata species identified we headed south for a few days in the Massif Centrale which offered magnificent scenery but also rain and low cloud that occasionally hid both landscape and car. As our time was limited and our capacity for sunshine unlimited we decided to head west for the Dordogne. The road unwound round innumerable bends following the river deep in its channel. Far up one of the side valleys a Honey Buzzard was display-flighting. It sailed in a long descending then ascending arc with wings upraised in a pronounced V shape. At the top of each arc it fluttered rapidly several times before turning and repeating the performance which it did many times, crossing and recrossing high above the valley.

Where this burn entered the main river were several Gold-ringed Dragonflies - we had last seen them at Oban a month before. A 2½ in. insect flew past us and landed far out on the bare shingle. It turned out to be an enormous grasshopper and, as we stood beside it, it climbed rapidly up the leg and on to the shoulder of the writer, decided it had gained enough height and launched off back to the bankside vegetation 100 yds away.

The Dordogne river was fascinating especially beyond the main valley, gliding in long calm stretches then rushing over the rapids. There were regular groups of canoeists clad in swimsuits and sun-tan sweeping down with the current. Grey-headed Woodpeckers take over from the larger Green on these riverine woodlands and their yaffling call (falling and fading away at the end) was regularly heard. There were special river dragonflies and the occasional snake. The sun shone ever more gloriously but it was time to go, northwards past the fields of sunflowers whose brilliant yellow faces were turning to the dark-brown of seeds. North to St Malo, over to Portsmouth and north again. As we crossed the Scottish border it started to rain and we were back to the barren sheep-grazed hillsides of home.

R.W.J. Smith

NOTES ON NATURAL HISTORY

Errata in 1985 Journal.

page 24, report for 9-8-85: delete reference to 'Heath Fritillary butterflies';

page 25, report for 29-9-85: for 'goshawks' read 'goosanders';

page 39, report on Carron valley: for 'Pearl-bordered fritillary' read 'Small pearl-bordered fritillary'.

General Observations, Winter 1985-86

Acorns, beechnuts, sycamore seeds and chestnuts were very scarce, though ash keys were more plentiful.

After a disastrous breeding season, very few birds were coming to the garden bird table and less than half the normal amount of bird food was used during the winter. First siskins noted on 18 February and the first greenfinches on 7 March, much later than usual.

It was reported to be the coldest February since 1947. Ponds and lochs were frozen solid. Mr Jim Stevenson of Vane Farm reported a fox walking on the ice at Loch Leven in search of carrion. An unusual number of owls and foxes were reported killed on the roads. It is probable that gritting material had melted the frozen snow at the verges so that this was the only place where field voles were to be found on the surface.

With the ground frozen solid throughout the month, the squirrels were desperate for food. At Hopetoun we noticed that they had attacked the winter buds of sycamore and horse chestnut trees. The ground below them was littered with debris and the centre of every bud had been eaten. One horsechestnut tree subsequently had scarcely any 'candles' this summer. The tree grew replacement buds which opened very late in the season. The twigs all look deformed.

CR, MR, IMcL

Specific observations

12.12.85 Inverleith Park Pond, Edinburgh: An interesting feeding technique by a Black-headed Gull (*Larus ridibundus*) was observed. It stood on the concrete edge of the pond peering into the water. To catch a Stickleback it dropped, feet first, into the water, taking the fish in its bill. It was successful several times; no other gull was seen to try this method. *(C.R.)*

9. 1.86 Vogrie Country Park: Three Roe Deer seen. *(C.R.)*

15. 1.86 Gullane: A flock of about 2000 Fieldfare feeding on Sea Buckthorn. *(M.R.)*

18. 1.86 Longniddry Bents (Gosford): A specimen, alive, of a Sea Mouse (*Aphrodite aculeata*). *(C.R.)*

9. 2.86 Cammo: Bramblings and other finches feeding in stubble in snowy field. *(D.A.)*

27. 2.86 Aberlady Bay: 50 Whooper swans flying and calling; about 100 Skylarks feeding in a stubble field; 10 Redpolls feeding on the salt-marsh; about 1000 Fieldfare feeding on Sea Buckhorn; a Water Rail was released by Mr Peter Gordon from his mink trapping cage at the Marl Loch. *(C.R.,M.R.)*

6. 3.86 Vogrie: The 2 pupae of Puss Moth were photographed, previously found as larvae on 31.8.85. *(E.G.,C.R.,M.R.)*

9. 3.86 Tweed at Caddonfoot: Pair of Goosanders. *(D.A.,G.M.)*

16. 3.86 Innerwick Castle: Marsh Tit or Willow Tit on a hawthorn. The voice is usually the best way to distinguish between these two, but this little bird had nothing to say. *(D.A.,G.M.)*

29. 3.86 Vane Farm: Fields of unharvested potatoes a bonanza for the geese and Whooper swans. The grain harvest had been untidily gathered because of the wet conditions, but this gave extra feeding to all birds during the winter months. *(Group Visit)*

31. 3.86 Hermitage of Braid: Green Woodpecker heard and seen flying through the trees. *(D.M.)*

3. 4.86 Yellowcraigs: Near the small hill which is an old volcanic plug, on the tree tops plain to be seen, a pair of Crossbills (*Loxia curvirostra*), the cock a very red bird. *(C.R.)*

12. 4.86 Barnton: Great-spotted Woodpecker. *(E.S.)*

13. 4.86 Philpstoun: Wall Whitlow Grass (*Draba muralis*) growing on canalside wall. *(G.M.,D.A.)*

26. 4.86 Noblehouse Farm, Leadburn: First swallows seen. *(Group Outing)*

8. 5.86 Yellowcraigs: Sandwich Terns.
Seton Sands: A pair of Grey Plovers in full breeding plumage. *(M.R.)*

10. 5.86 Saughton: Morel. *(E.S.)*

18. 5.86 East of Lauder: Moonworts (*Botrychium luraria*) in closely-grazed field. *(G.M.,D.A.)*

24. 5.86 Orkney: Golden with daffodils, primrose, marsh marigold, gorse and the largest, most splendid dandelions I've ever seen! *(M.R.)*

31. 5.86/ 5. 6.86 Janet's Foss: Two large fairy rings of St George's Mushroom (*Tricholoma gambosum*) seen in grassland.
Leighton Moss: Watervole crisscrossing path and watched for several minutes by a small group. *(Malham Tarn Week)*

7. 6.86 South of Kirkmichael, Perthshire: Near adult pair of Golden Eagles circling low over a small stand of windswept trees. One bird calmly surveyed us before soaring away. A wailing cry from nearby Loch Oisinneach drew attention to a lone Black-throated Diver. Three pairs of Osprey, a Peregrine and a Hen Harrier were also spotted in the area. *(D.A.,G.M.)*

8. 6.86 Corstorphine Woods: Wood Warbler. *(D.A.)*

14. 6.86 Mugdock Park: Many galls of Cynipoid Wasp on oak bark. *(E.S.)*

15. 6.86 Glen Turret, Perthshire: Pair of Golden Eagles in aerial display high over Lochan Uaine. *(D.A.,G.M.)*

16. 6.86- 23. 6.86 North Uist: Otter tracks seen repeatedly during week mainly in Loch Eport area. One otter seen at close quarters in a burn we were about to cross. It continued a short distance up the burn into Loch Obisary where it was seen again a few minutes later. Two days later, in the same part of the island an otter was watched on the far bank of a small lochan. While sitting in the heather watching, a second otter came pounding noisily past and disappeared into the same lochan. *(C.S.,E.F.)*

18. 6.86 Eriskay: At the top of Ben Scrien a male Snow Bunting, two Red Admirals and two Painted Lady butterflies. On side of Ben Scrien, *Cordiceps gracilis*, a fungus parasitic on lepidotpera caterpillars. *(E.F.,C.S.)*

29. 6.86 West of Stow: Oak Fern (*Gymnocarpium dryopteris*) in scree above Lugate Water. *(G.M.,D.A.)*

1. 7.86 Priestfield Road: Juvenile Redpoll rested on garage roof for a few seconds before flying off. *(B.G.)*

1. 7.86 Aberlady Bay Local Nature Reserve: Underneath an old fish box, in a pile of collected rubbish, a small specimen of Common Newt (*Molge vulgaris*) was found. *(C.R.)*

27. 7.86 River Almond: Kingfisher.
Bellsquarry: Redstart.
(Both within Livingston New Town area.) *(G.M.)*

31. 7.86 Lammermuirs: Pair of Merlins near Rutherford's Cairn. *(G.M.)*

1. 8.86 Salisbury Crags: Six-spot Burnets in increased numbers. This colony has now apparently established itself. *(W.G.)*

3. 8.86 Ben Chonzie: Small colony of *Woodsia alpina* on a rock ledge. 'The Flora of Perthshire', Buchanan White, 1898, shows *Woodsia* on the mountain. Happily this rare artic alpine still lives up there. *Saussurea alpina*, in flower - another interesting plant among many others. While searching for alpines a Golden Eagle circled the mountain top and at one stage swept past 200 ft below our viewpoint. *(D.A.,G.M.)*

9. 8.86 Bowhill, Selkirk: Scotch Argus butterfly. *(E.S.)*

16. 8.86 Near Duns: Red Squirrel. *(E.S.)*

20. 8.86 Near New Abbey, Dumfriesshire: Red Squirrel. *(E.S.)*

29. 8.86 Balerno: Burnet Saxifrage (*Pimpinella saxifraga*) and Tall Fescue (*Festuca arundinacea*) by roadside near Marchbanks Hotel. *(D.A.)*

31. 8.86 Pentlands: Emperor Moth larvae on Black Mount (093 451). *(W.G.)*

6. 9.86 Schiehallion: Fourteen Ptarmigan took to the air on the eastern shoulder of the mountain. Others stole away on the slope. When surprised Ptarmigan are often reluctant to fly and rely on their excellent camouflage for protection, especially in a rocky landscape. *(G.M.)*

7. 9.86 Teviothead: Red Squirrel crossing road. *(B.G.)*

8. 9.86 Greenbank Drive: *Volvariella speciosa* growing where large quantities of garden rubbish have been dumped. A large fungus usually found on rich manured soil and compost heaps. *(E.F.)*

9. 9.86 Penicuik: Oak-fern (*Gymnocarpium dryopteris*) by the Hare Burn near where it joins the North Esk. Oak-fern is rather uncommon in the Lothians. *(G.M.)*

15. 9.86 Pentlands: A single Whinchat seen on bracken on Black Law. *(M.R.,E.S.R.,G.McD.)*

18. 9.86 Pentlands: The first Pink-footed geese of the winter observed above West Water Reservoir. *(M.R.,E.S.R.,G.McD.)*

18. 9.86 Saughton: Two small Copper butterflies mating. *(E.S.)*

21. 9.86 Abbey St Bathans: Eight Goosanders on the river at Elba, an elbow bend on the River Whiteadder opposite Edinshall Broch. *(D.A.,G.M.)*

21. 9.86 Almondell: *Polyporus nummularis* fungus on dead twig. *(E.S.)*

Mid Sep '86	Biggar: Otter swimming in small tributary of the Clyde near to Biggar. *(C.C.,S.C.)*
5.10.86	Dunkeld: Great Skua on Loch Ordie. *(G.M.,D.A.)*
12.10.86	Lammermuirs: Peregrine Falcon, mobbed by a pair of crows, over scrub oaks by Bothwell Water. The falcon ran rings round the crows and saw them off.
19.10.86	Barnton: Sparrowhawk with young blackbird pinned down on ground, pounding on its back and removing feathers while bird still alive. *(E.S.)*
3.11.86	Priestfield Road: Red Admiral butterfly in garden. Very new looking specimen. *(B.G.)*

Ring Roads and Badgers

Plans for a new section of road to link the western perimeter of Edinburgh, near Sighthill, to the Newbridge roundabout have been under discussion for some months. Whatever route is finally chosen it is inevitable that some badgers will be at risk in the Ratho area through which the road will pass.

Badgers are creatures of habit and use regular routes to their feeding areas and when visiting neighbouring setts in the same territorial group. They continue to use these same pathways even when new roads are built which cut across their traditional routes. Quite apart from the fact that badgers will be killed, one has to accept that a major accident could occur if a vehicle travelling at speed should hit a fairly heavy beast such as a badger weighing about 30 lb.

Reflecting mirrors at the sides of a road have proved effective in deterring deer from crossing amongst traffic but have been less successful where badgers are concerned.

Railways, too, have their problems. A newly electrified railway line has been causing so many deaths by electrocution that the authorities are seriously considering leaving a small length of line without current to allow badgers to cross safely.

Removal of badgers from a sett with closure of the holes may be a temporary solution, but sooner or later the badgers will return and re-occupy the sett. Altering the line of a new road may sometimes be an alternative possibility but the extra expenditure entailed would usually be considered unjustified.

For a more practical solution, the first essential is to carry out a thorough survey of the area. This was done during January and February 1986 when all known setts were visited and the area was thoroughly searched for any new ones. The proximity of the setts to the proposed road was noted and the likely feeding areas taken into account. Although badgers on occasion may travel 2 or 3 km from their home sett, this is not the normal day to day pattern and it can be taken as a rough guide that the majority, while travelling extensively during the night in their home territory, will not be more than 1 to 1½ km from home. On the grounds of these assumptions it transpired that only one group of setts was at risk. In this group setts will be close to the new road and there may be much crossing and recrossing of the road to forage on either side.

What is required for the safety of badgers and motorists is some sort of underpass. To be successful it should be sited as near as possible to the route the badgers habitually use. To be financially feasible, it must be included in the early planning stages of the road. It can take the form of a straightforward tunnel, or alternatively, a stream culvert. At the instigation of Michael Clark, the Highways Department in Hertfordshire considered the possibilities of an underpass in the early 1970's and in due course built a suitable culvert into a new road. A few years later, after representations by J. and E. Ratcliffe, a culvert was built into the M53 in Cheshire. In 1976, a concrete tunnel was built into the M5 in Somerset following discussions with Ernest Neal.

Tunnels should be of concrete pipes, 600 mm in diameter. Culverts should be of corrugated galvanised steel, not less than 1 m in diameter and should have a built-in concrete platform along the entire length above the water level. Unco-operative badgers which do not understand what is good for them may have to be coaxed and cajoled with enticing scent trails leading to the tunnel and 100 mesh galvanised wire sheep netting erected so that they cannot dig under it, to stop access to the road. Within weeks the animals have usually become accustomed to their new manmade route.

E. Farquharson

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Rare Spiders in Lothian

Not long after taking an interest in spider identification, I collected a specimen within the building at my place of work at Crewe Toll. The spider was subsequently identified as *Tegenaria agrestis* and confirmed as a first record for Scotland. That was back in 1971.

Recently (September 1986) I was presented with a 'large spider' collected at Leith Docks. It turned out to be a female of the same species, so with eager anticipation of discovering a colony, the site was revisited and examined more closely. And indeed there was a thriving colony with over a dozen females and one male found in typical *Tegenaria* style cobwebs under rubble and old railway sleepers. At least two of the females were guarding their large egg sacs under stones.

Since the original capture was made only 5 km from the docks and the two sites are joined by an old railway track, it is interesting to speculate that there may have been something like a ribbon development in the local spread of this particular species.

Merrett considers *Tegeneria agrestis* to be almost certainly a recent immigrant from the continent to Britain, having first been found in 1949 in East Dorset, and having since spread northwards to Lancashire. He suggests that as most of the records have come from densely populated parts of the country, it may have been carried with building materials, and this of course could neatly explain its presence in Leith Docks.

Whilst investigating the *Tegenaria* colony a few specimens of some smaller species were taken, and amongst these were found males and females of *Erigone aletris*, an even rarer spider. It belongs to the family Linyphiidae, the 'money spiders', and was described as new to Britain by Snazell as recently as 1980, having been taken by him in 1976 and 1978 from a dune meadow near Gullane. Previous records of this species are from coastal habitats in North America and whilst this record is the second for Britain, Leith Docks could well be the entry point for the species with a subsequent spread eastwards to Gullane.

Another area that has come up with some interesting finds is the grounds of Hopetoun House which has provided the first record for Scotland of *Araniella opistographa*, related to the familiar garden spider, *Araneus diadematus*, but with a bright green coloured abdomen. However this species is not likely to be a true rarity as it has been separated from the almost identical and quite common *Araniella cucurbitina* only recently, and has since been found in numbers in Perthshire. They are both found on trees and bushes.

But Hopetoun can also claim *Entelecara acuminata*, a species of Linyphiid which had previously been taken only once in Scotland, in Kirkcudbrightshire, and these are still the only two known sites north of the border. Locket and Millidge considered this species to be local in south England and rare in northern England.

The Clubionidae is a family of nocturnal hunters which generally live in silk cells under stones, in grass clumps or in higher foliage. *Clubiona norvegica* prefers moss and sphagnum and occurs in Auchencorth Moss, one of only three known sites in Scotland. At the same site I have taken *Semljicola caliginosa*, another Linyphiid, which was again recorded by Locket and Millidge as very rare but which has since been found in another three Scottish counties and in a number of sites in north England.

J.A. Stewart

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A Myriapod and Isopod Survey in Lothian

As the above has been assisted by a grant from the Sime Bequest Management Committee, it is proper that the membership should have an interim report. A short history to sketch in the background is necessary.

In 1982 the three Hopetoun Rangers, all members of the ENHS, decided to extend their knowledge of their local fauna by collecting Centipedes (Chilopoda) and Millipedes (Diplopoda) for forwarding for identification. This would assist the Biological Recording Centre at the Institute of Terrestrial Ecology at Monks Wood. Completion of a record card was vital. Chilopoda and Diplopoda, grouped together as Myriapods are two classes of the Phylum 'Arthropoda', the 'jointed legs'. In our study we were assisted by grants from the British Ecological Society.

Before long, searching extended beyond the grounds of Hopetoun House, quickened when it was realised how much was waiting to be found. Woodlice, non-marine Isopoda, Arthropods of the class 'Crustacea' were added at the end of 1984. By the end of 1985 the number of first records in five vice-counties were as follows:

		Chilopoda	Diplopoda	Isopoda	Total
Peeblesshire	(78)	1	3	1	5
Selkirkshire	(79)	1	7	-	8
East Lothian	(82)	1	1	-	2
Midlothian	(83)	-	10	-	10
West Lothian	(84)	2	9	2	13
Totals		5	30	3	38

Numbers in parentheses denote vice-counties.

In 1986 I decided to embark upon a three-year plan to map the distribution of all three classes within the Lothians. Every 10 km square, or part square, was to be visited, collecting done and the results plotted to within 1 km. This would mean more than one visit per square to cover as many habitats as possible. Towards this I have been given a grant by the Society: work will continue until 1988, after which I propose to submit a full report. Results obtained so far can best be shown in a table.

	No. of species		
	VC82	VC83	VC84
Chilopoda	1	9	9
Diplopoda	11	15	10
Isopoda	6	5	8
Totals	18	29	27

Visits to the Royal Botanic Garden, Edinburgh, in May and August of 1986 resulted in three interesting discoveries, as follows:

Chilopoda (Centipedes):

1. *Lithobius lapidicola* (= *pusillus* Letzel), a very common Mediterranean species, new to Britain.

Isopoda (Woodlice):

2. *Styloniscus mauritiensis* (Barnard, 1936), from Mauritius, Indian Ocean, new to Britain.
3. An unidentifiable specimen, new to Britain.

Should anyone be in any doubt as to the value to the Society in subsidising research, please allow me to quote from a letter to me from Mr D. Richardson, organiser of the Millipede Survey,

> "What a remarkably go ahead Society that allows grants to members to carry out work - that's what I call progress. You can certainly tell your sponsors that what you are doing is a very great help to the Myriapod Survey - in fact you have put VCs 82, 83 and 84 on the map - there were practically no records at all before you started."

C.P. Rawcliffe

The Swallow

Two things bothered me as a child regarding swallows: one was the certainty of our teacher that we *must* know the swallow, the bird with the big long forked tail. Try as I would, I could never see a swallow round our house eaves, or joining me on my summer evening play on the hill just yards from where we lived. The second perplexity was my mother's quoting, "One swallow doesn't make a summer" - probably when I wanted to doff layers of winter woollies at the first sign of spring sunshine - but as I had never seen a swallow, how did she know there was only one: and anyhow, what did she really mean? And to top those puzzlements, why was a bird sharing its name with a verb: what had a bird to do with swallowing.

Fortunately the passing years have resolved these confusions, and as swallows are such fascinating birds, I'd like to share some thoughts on them with you. The Latin name, *Hirundo rustica*, is a straight translation - *Hirundo* meaning swallow, and *rustica* of course being rustic. Our English word 'swallow' comes through quite a number of Old European languages stemming from the same root, all of which presuppose 'swalwō' (Germanic) which literally is 'a cleft stick' - in other words a tail description naming the bird. There have been many legends over thousands of years throughout the world regarding the swallow. The classical Greek writers heralded the swallow as the harbinger of spring, just as we do. One of the lovely fables comes from Scandinavia where the story is that the swallow hovered over Christ on the Cross, crying "Svala, svala" ("console, console"), and the bird's name has remained.

That was one of my questions resolved. The other as to why I couldn't see swallows as a young child is so obvious: they don't live in cities. Nowadays they nest in the suburbs, but this is because with so many of the old style farms being modernised, there is less 'house-space' available to swallows, although to contradict this, as houses have encroached so widely over the countryside, swallows have adapted their lifestyle and come to live on the edge of towns and cities.

In early April the first swallows appear in southern England, but it is almost a month before the intrepid travellers make it to the north of Scotland. The availability of food is of greatest importance and determines the swallows' arrivals and departures. The greatest hazard of their journey from South Africa is the crossing of the Sahara Desert. On the route north, the winds are not in their favour, and in bad years thousands of fatalities have occurred in or north of the Sahara. However, successfully combatting the flight north, the first birds arrive in Scotland late April/early May: these are the males, and the old hands immediately swoop in to their old houses. The young ones who were reared the previous year, build their nests in the same area. The females arrive shortly afterwards, and together they 'refurbish' or build their nests. The nest is usually attached to something, e.g. ledge or rafter, is cup-shaped and basically composed of globules of wet mud strengthened with rough grasses. When each patch of mud has dried then the next layer is added. When the cup is complete, the lining of feathers, hair and fine grasses is added. The nests are usually on the insides of buildings, barns, garages, though sometimes in caves and on cliffs. Some even build inside chimneys, and this startling habit gave rise to the 17th century name, 'chimney swallows', though undoubtedly they were the same Common or Barn Swallows in the 17th century as those nesting around us today. They are semi-social birds, nesting in single pairs, although forming loose colonies.

Courtship is by aerial display flights, and there one can see the beauty of swallows. Their tails have white spots, but of course it is the magnificent long tail streamers which make the swallows so identifiable. The male's are longer than the female's, and the young ones have even shorter streamers. In fact juvenile swallows can be mistaken for house martins. The upper part of the body is a deep blue, with the male having a higher gloss than the female. The underpart is basically cream, though sometimes slightly tinged with pink. Forehead and chin are bright red, and there is a collar of deep blue. The other easily diagnostic feature of the swallows is the long narrow wings.

At last the nest is complete: the aerial courtship is over, twittering sky-songs are temporarily ended, and the business of laying the eggs and rearing the family begins. There are usually 4-5 eggs - though sometimes 3 or as many as 8, basically white heavily marked with reddish-brown. The incubation of a fortnight is done solely by the female, but both parents are assiduous in feeding the young when they are hatched. The young are garbed in grey down, with yellow mouth and a whitish gape. What is lacking in beauty is well compensated for by their powerful voice. A single chick I watched was fed on average every 4-5 minutes, and it could spot its parent homing in long before the bird swooped past - inches away - and up to the rafter with another mouthful for the ever-hungry youngster. When fed, the chick then obviously 'enjoyed' his mouthful, and hunched back into the nest, looking somewhat desolate, until he was aware that more food was winging its way towards him, when again the loud urgent calls were sent out to the parent. In the moments it took to pass the food from parent to chick, it was possible to observe the way in which the parent clung tenaciously with its strong claws. The toes/claws of swallows are very strong, although the rest of the foot is weak: they are not ground-birds. I watched this feeding for about two hours. By nightfall the parents must be exhausted! After about three weeks the young leave the nest. Swallows feed entirely on insects, and although they normally rear two broods, if conditions are favourable, and insects available, a third brood may be hatched. Sometimes the independent young of the first brood will help to feed the second brood - and similarly the second brood can help with the third.

Their food is gathered largely from over rivers, agricultural and meadow land. When the weather is inclement, the swallows gather in flocks on more specific areas where the insects will also have 'flocked', in the shelter of woodland, or by water where there may be a hatch.

The weeks pass and it is autumn, and the birds think of their migration to South Africa. Because of ringing, it has been possible to establish their movements. Nowadays about one-third of British swallows migrate to South Africa. The huge numbers of swallows seen decorating telephone wires are in fact the young ones and they are not so much planning their route south, as assimilating their own area of countryside, so that on their return they will know their 'home'. The mature swallows are too busy to spend hours sitting around.

A few of the old fables are quite horrendous, but most fables tell of the swallow bringing good luck - and bad luck to the person who would injure one. Some have mystical or religious connotations, and the old couplet,

The martin and the swallow
Are God Almighty's birds to hollow (i.e. hallow)

has a link with our metrical psalm,

The swallow also for herself
Hath purchased a nest -
Even thine own altars, where she safe
Her young ones forth may bring

and in closing they bring a feeling of benediction to the saga of the swallow.

K.L.S. Manson

Where have all the Tortoiseshells gone?

After two cold, sunless springs and summers it is not surprising that this year has been even more barren of butterflies than the early sixties. On some hot likely 'butterfly days' I have not seen one.

But can the weather's effect on their breeding season alone account for the eclipse of the Small Tortoiseshell, usually common and taken for granted? I have not seen one this year. Others of course will, I hope! The Large and Small Whites and the Meadow Brown seemed few and far between at least in the landward areas of Lothian.

The Orange Tip, however, was at Pencaitland (2 June) and Duddingston (11 June) while I saw the Small Copper on each of three visits to the Queen's Park between 16 June and 1 August. The Common Blue was there, too, appearing first on 1 July, but I did not notice any on the Moorfoots, Lammermuirs and Pentlands this year.

Graylings were numerous on Tentsmuir on 17 August along with two Dark Green Fritillaries which I had seen on 21 June at John Muir Country Park where I also noticed the Ringlet. I understand a few Painted Ladies have been recorded on the coastline. The season ended on a cheerier note, October's Indian summer producing the Red Admiral (Barnton on the 10th and Peebles on the 13th).

Wilfred B. Grubb

Forth Island Bird Counts 1986

The East Lothian trips were made in good conditions but a gale postponed the Inchkeith count until July when Allan Brown got out with the seabird ringers. With the later count date he probably lost some birds but generally speaking his visit was very satisfactory.

Although the spectacular increases in breeding numbers - and the occasional hiccups - of past years seem, hopefully, to be behind us, there are still all the indications of flourishing seabird communities in Forth. There is evidence of a slow increase of Guillemot on all the islands and, especially in Inner Forth, of Kittiwake and Shag, although without more accurate counts

	Craigleith	Lamb	Fidra	Inchkeith	Inchmickery
Fulmar	140	2	160	656	9
Cormorant	94	104			
Shag	378	301	67	20	24
Eider	30+	1	150+	X	82
Gt Bl-back	3	?1			
Lesser Bl-back	*c*380	*c*3	X	X	X
Herring Gull	X	*c*150	X	X	X
Kittiwake	*c*725	167	532	369	
Common Tern			26		202
Arctic Tern			5		
Sandwich Tern					416
Roseate Tern					18
Razorbill	40	21	48	23	
Guillemot	1900 bds	2750 bds	176 bds	33 bds	
Puffin	1350 bds	2+bds	190 bds	1450 bds	

All figures are sites or pairs except where indicated. X means present but not counted. Once again I am grateful to the RSPB for providing the Inchmickery data.

on the Bass we cannot be sure that birds are not moving from there because of continuing pressure from the every spreading Gannets. Fulmar continue their long-term build-up and only the future of the big gulls and terns is uncertain under present conditions.

In spite of annual outbreaks of botulism which have decimated some Herring Gull populations in Britain, there is no appreciable decrease in Forth at present. Perhaps if the general population increase of 17% per annum has been checked by this disease some stabilisation may occur. Terns are struggling to hold their own so it is a relief that the rarest one, the Roseate Tern, has had a better year with more reported at their British breeding colonies and a doubling of numbers to 18 pairs at Inchmickery.

Although the seabirds are doing well under 'present conditions' it is salutory to recollect that, given present day technology and the driving philosophy of the 'quick buck' these conditions can change radically in a very few years. In other parts of the North Sea, seabirds are suffering from food shortage due to over-fishing of once overlooked resources such as sand-eels. Even after the Forth seabird populations attain a balance with their present environment we must continue to monitor them to warn of the next disaster!

The Inchkeith keepers reported two Greylag nests this year and there was a pair with two big young in July. A more intriguing report was of two dead Leach's Petrels seen by another bird-watcher on our visit to Craigleith. Unfortunately the news came on our way back to North Berwick so confirmation was not possible. A colony of Greylags on Inchkeith is one thing but a colony of Leach's Petrels on Craigleith ...!

R.W.J. Smith

EXCURSIONS 1986

Key for excursions:

B - botany
F - fungi
I - insects
G - general
Ge - geology
T - trees
ML - mosses and liverworts
O - ornithology
S - seashore

Day excursions and weekends

1985			
7 Dec	Musselburgh/Aberlady	*O*	Mr C. Pountain
26 Dec	Gullane	*S*	Mrs M. Robertson
1986			
18 Jan	Port Seton	*O*	Mr C.P. Rawcliffe
29 Mar	Vane Farm	*O*	Mr J. Stevenson
26 Apr	Cloich Hills	*G*	Mr G. McDougall
3 May	St Abbs Cliffs	*OB*	Mr K. Rideout
10 May	Ben Cleuch and Dollar Glen with Dundee Naturalists Society	*B*	Mr J.K. Cook
17 May	Teviotside and Hoselaw Loch	*G*	Mrs E. Christie
24 May	Birnam Woods, Dunkeld	*G*	Mr D.W. Adamson
30 May-6 Jun	Malham Tarn Field Centre, Yorkshire		
31 May	Bass Rock with SOC	*O*	
1 Jun	Lamb and Fidra with SOC	*O*	
7 Jun	Craigleith Island with SOC	*O*	
14 Jun	Mugdock Park	*BG*	Mr I. McCallum Mr R. Hunter
21 Jun	Baron's Haugh, Motherwell	*OB*	Mr R. Nisbet
28 Jun	Longnewton, St Boswells	*BI*	Mr A.J. Smith
5 Jul	Monteviot Woodland Centre	*T*	Mrs A. Inglis
12 Jul	Smailholm Tower	*BO*	Mrs. M. Little
19 Jul	Ben Lui, Tyndrum	*B*	Miss J. Muscott
26 Jul	Aberlady Bay	*OB*	Mr P. Gordon
2 Aug	Old St Boswells	*B*	Mrs V. McFarland
9 Aug	Bowhill, Selkirk with Botanical Society of Edinburgh and British Plant Gall Society	*B*	Mr A. Bennell
17 Aug	Dalkeith Old Woods	*F*	Dr R. Watling
23 Aug	Tinto Hill	*Ge*	Mr B. Baird
30 Aug	Abbey St Bathans	*B*	Mrs M. Watson
31 Aug	Tailend Moss	*G*	Mrs B. Richardson
6 Sep	Hopetoun House	*F*	Dr P. Mason

13 Sep	Peebles circuit	G	Mrs J. Lyburn
27 Sep	Pentlands circuit	G	Mr G. McDougall
22-27 Oct	Islay Field Centre	O	
15 Nov	Musselburgh/Aberlady	O	Mr C. Pountain

Evening excursions

7 May	Flotterstone	O	Mr B. Clunie
14 May	RBG Herbarium	B	Dr I. Edwards
28 May	Langskail, Howgate	G	Mrs B. Smith
11 Jun	Dalmahoy	G	Mrs S. Gray
18 Jun	Craiglockhart Hill	G	Mr C. Rawcliffe
25 Jun	Bawsinch	G	Mr C. McLean
2 Jul	Boghall Glen	G	Dr R. Robinson
9 Jul	Cramond	G	Mrs M. Robertson
30 Jul	Almondell	I	Miss M. Konik

REPORTS AND EXTRACTS FROM REPORTS

Full lists of animals and plants seen on outings are not included in the reports but are lodged with the Records Secretary.

Musselburgh Lagoons and Kilspindie - 7 December 1985

This must be regarded always as the outstanding 'bird walk' in terms of species to be seen and to be seen at remarkably close quarters. It is therefore of particular value to people of little experience of birdwatching who are keen to learn.

A dozen members walked along the sea wall at Musselburgh in the morning and along the west side of Aberlady Bay in the afternoon. Desite a fairly choppy sea at Musselburgh the sea watching was of the usual high standard. All the usual birds were in evidence including Velvet Scoter, Slavonian Grebe, Razorbill and Guillemot. Large numbers of Wigeon and Pink-footed Geese were seen at Kilspindie.

C. Pountain

Gullane - 26 December 1985

Our annual sausage-sizzle was attended by about thirty members including several children who are always especially welcome. Eight or so members walked a little way along the beach to build their fire while the larger party walked from Gullane, westwards along the shore to Jophies' Neuk. On the way we noted the rock formations in distinct bands. We were glad to have the cold wind at our backs. There were few birds as it was almost high tide. The strong north-east wind swept waves over the rocks and at one point threatened one of our fires.

We returned by way of the dunes which gave us some shelter. We found a flock of Fieldfares feeding on buckthorn. The small birds kept well down in the bushes. We saw a few Blackbirds, and a pair of handsome Bullfinches. The Sea-buckthorn was a lovely sight with a heavy crop of orange berries.

M. Robertson

Vane Farm, Loch Leven - 29 March 1986

This was the first 'wild goose chase' organised by the Society and it was gratifying that so many members took part, at least thirty including some family parties.

Mr Jim Stevenson, the RSPB Warden at Vane Farm and his assistant, Mrs Fay Pascoe, had taken a great deal of trouble to organise a varied and interesting day for our group. Rarely have we been so well received and so well looked after. First of all, we saw slides of geese to help with identification and then we set off in cars, going east of Loch Leven where the flocks were feeding. We had a very good views of both Pinkfoot and Greylag and at one point a flock estimated at 5000 took to the air and filled it with noise and clamour. We returned to the Centre for lunch and were shown an RSPB film on geese. In the afternoon we divided into two parties, one group walked round the reserve while the other went to the Waterston hide on the edge of Loch Leven. Midway through the afternoon, the parties changed over. Developments at the Reserve were explained by Mr Stevenson and we noted with particular interest his bat boxes as this is Bat Recording year. It was a very enjoyable and rewarding day. The relaxed, friendly and humorous manner of our leaders was greatly appreciated.

M. Robertson

Cloich Hills, Peeblesshire - 26 April 1986

The first summer meeting of 1986 was attended by 24 members, glad to take advantage of the return of better weather after a prolonged winter. The party assembled at the Noblehouse Farm lay-by and ascended the farm track to the extensive coniferous forestry plantation which has replaced upland pasture as the main land use in these hills. This initial ascent crossed the Southern Upland Boundary Fault, more noticeable further east on the Moorfoots and Lammermuirs. The well-surfaced forest roads were followed as far as possible, the only departure being to visit Wauplaw Cairn to obtain views of the Moorfoots, Pentlands, Meldons, Broughton Heights and Peebles. Old dry-stane dykes, the ruins of Grassfield Farm, and occasional stands of dominant beech and elm are relics of the economy and land use that preceded re-afforestation. Larch, Sitka spruce, Norway spruce, Douglas fir, Lodge pole pine and a possible Grand fir hybrid now cover most of the ground, their uniformity of height and layout giving the area a monotony which is often criticised.

The extensive planting of exotic species provides an unsuitable habitat for many native plants and animals and this factor, together with the poverty of the soil, the effects of earlier sheep grazing and the delay in the arrival of spring combined to deny the party many glimpses of wildlife. There was much evidence, however, of foxes and short-tailed voles; surprisingly, no Short-eared Owls were seen, despite an obvious food source. A Willow Warbler was heard and Swallows were seen at Noblehouse; elsewhere members of the party saw Kestrel, Sparrowhawk, Black Grouse, Partridge, Pheasant, Mallard and a number of smaller birds. Two Roe Deer raced across a clearing. Coltsfoot and Whitlow Grass were in flower, and the spears of the Single-headed Cotton Grass were just appearing near Wauplaw Cairn. The blue sheen of the sedimentary rock at a roadside excavation was attributed to the presence of the elment manganese.

D. Adamson

Teviotside and Hoselaw Loch - 17 May 1986

Twelve of us started off from a lay-by just outside Kelso on the St Boswells road to walk for three miles or so along the River Teviot.

We took a slight detour at the start of our walk to look at the ruins of Roxburgh Castle, standing on a peninsula between the Rivers Tweed and Teviot. Under a Sycamore tree we saw partial remains of the long disappeared old town of Roxburgh where James II was killed in 1460 trying to regain the castle from the English.

Since it had been a cold, wet spring there were not many actual flowers to be seen, so the Cuckoo flowers and Stitchwort were welcome sights. The blossoming Blackthorn made a splendid singing perch for a Whitethroat and a Willow Warbler; Sedge Warblers could be heard all along the river. There were several fishermen on the river and as we passed one of them landed a Grayling fish just large enough for the pan!

In the afternoon we drove about five miles to the SWT reserve at Hoselaw Loch, where there were numerous Swifts, a Heron, Goosander and Great-crested Grebe. Some of us then walked on the raised bog at the end of the loch and then returned to the cars just as the rain started.

B. Gill

Baron's Haugh, Motherwell - 21 June 1986

Baron's Haugh is an exciting new RSPB reserve situated half a mile south of Motherwell. Being on the edge of suburbia and the Lowlands industrial belt (Gartcosh and Ravenscraig are nearby), it is a refuge for wildlife. It was purchased three years ago and will be developed as an Education Centre.

It has a variety of habitats. First the Haugh itself. Haugh means a flooded meadow. The water level will be controlled by a sluice, kept high in summer for breeding grebes and ducks, and dropped in autumn to attract waders.

There are 12 acres of meadows. These will be planted with a herb-rich mixture to attract insects; at present they are full of buttercups and not much else. There are 40 acres of natural mixed deciduous woodland, 45 acres of parkland which was part of the Dalziel Estate and an area of scrub which came about after the previous owner had clear-felled the trees. This area is to be coppiced to make it attractive to Warblers.

The River Clyde with sand banks and shingle beds forms the southern boundary. Here we saw Sand Martins and Common Sandpiper.

Three hides are planned: Alder and Willow have been planted to make a natural screen. In the woodland, Hazel and Blackthorn have been put in for under planting and over a thousand Hawthorns planted for scrub.

So far there are 65 species of breeding birds, and a total of 136 species has been counted as well as 305 plant species. There are both Red and Grey Squirrels and we saw Badger footprints. Little is known yet of the amphibians, invertebrates, fungi, mosses and liverworts, so Barn's Haugh will be a happy hunting ground for any naturalist for some time.

We learned these facts from Mr Russell Nisbet. Members enjoyed being shown round on a fine, sunny day. We had never seen so many Orange-tip Butterflies and the banks of the Clyde were bonny indeed with Russian Comfrey and Dame's Violet.

M. Robertson

Bawsinch, Duddingston, Edinburgh - 25 June 1986

Mr C. McLean, the SWT manager of the Bawsinch reserve escorted the group round the reserve and explained how it had been developed over the past 16 years since purchase.

Four main habitats comprise:

(a) an area of mown grass for use of the Duddingston Greylag flock;

(b) native wood and scrub - mainly hawthorn;

(c) planted woodland - now established;

(d) ponds.

An area of oak planted 14 years ago is now well established and some 16 ft tall. They are shading out the ground flora of Butterbur and spring flowering plants such as Bluebells and Primroses have been successfully introduced here. Other more recent plantings are now emerging from the surrounding mass of Willowherb. Goat Willow trees were developing from self-sown seed and providing good habitat for insects.

Four ponds were seen, of differing depths, dimensions and aspects. Each was trying to provide a distinct habitat. The Gunn pond has some plants now established but the older ponds have more variety with Broad-leaved and Narrow-leaved Reed Mace being seen side by side along with the flowering rush and Bog Bean.

From the Connell hide we saw Crested Grebe with chicks and a few families of Coots. A well-justified vote of thanks was made to Mr McLean.

W.D. Gill

Longnewton Railway Cutting, St Boswells, Roxburgh - 28 June 1986

On 6 July 1975, Pyramidal Orchids (*Anacamptis pyramidalis*) were found in flower on the south-facing slope of this deep cutting. This was a new record for the central Borders, and it seemed likely that the seeds had come by train and found the soil here to their liking. (In a similar way there are records of Rusty-back Fern (*Ceterach officinarum*) at Newcastleton and Hawick.) The colony was kept under observation for some years, then a crisis occurred - a notice was posted saying that the cutting was to be used as a rubbish dump. Protests from SWT and NCC were successful and the proposal dropped, and the site was declared an SSSI.

Subsequently more Pyramidal Orchids were found on another bank half a mile to the south, and Frog Orchids (*Coeloglossum viride*) and Twayblade (*Listera ovata*) were also present.

It was hoped to show these to members, but after a miserable spring, growth was later than usual and all that could be found were a few young Spotted Orchids (*Dactylorhiza fuchsii*), Twayblades and Fragrant Orchids (*Gymnadenia conopsea*).

The day was one of brilliant sunshine and high humidity, yet butterflies were scarce. One Red Admiral - and one member was convinced that she had seen a Clouded Yellow! She was probably correct for it was found that two specimens, which had emerged from bought pupae, were liberated in Galashiels on the 25th, and this could well have been one of those.

A Six-spot Burnet moth cocoon was seen, the first of the year. There is a strong colony of them here on the well drained banks, and later in the year there are many Common Blue, Meadow Brown and Ringlet butterflies.

During the last ten years there has been a marked extension of whin and blackthorn thickets and hawthorns are appearing everywhere, while coarse grasses are choking other herbs. While under railway authority the banks were probably burned periodically and shrubs kept in check. Members of the Central Borders Support Group (SWT) have cut back excessive growth on two occasions during the winter and hope to do more every year to maintain the rich grass sward.

After lunch the party visited the river-side walk above Dryburgh footbridge and walked as far as Sprouston Burn to see a colony of Japanese Butterbur (*Petasites japonica*) with enormous leaves and 6 ft petioles.

A.J. Smith

Boghall Glen, Biggar Road, Edinburgh - 2 July 1986

On a visit two years previously, Cameron Easton of the Nature Conservancy Council told us of his proposals for the improvement of the environment in Boghall Glen. On this occasion we were joined by Dr Richard Robinson who is in charge of the conservation team that has been at work here since last September.

The mill pond in the farmyard is due to be cleaned out in the near future. Dead elms have been removed from its bank.

A nature trail has been laid through the wood in the lower part of the glen. Native trees - oak, ash and birch - are encouraged and some have been planted. Some other species - conifers and sycamore - have been thinned out to give more space and less shade.

At the top of the glen the duck pond has been cleaned out and fenced off. The dam is to be repaired so that the pond will refill. An area of juniper at Windy Goull has been fenced off for protection from grazing.

On the east facing slopes of the Pentlands above Boghall farm, further tree planting has taken place on an area which has been woodland in the past and where some woodland ground species are still present.

The ENHS was invited to participate in recording of flora and fauna and to monitor future changes which result from the conservation activity.

W.D. Gill

Cramond Riverside Walk - 9 July 1986

The view from Cramond across the Firth of Forth is always attractive. On the foreshore, the sand is building up to form a beach, stabilised by Lyme grass and Sea-couch grass. A colony of Sea-sandwort is now well established and Sweet Cicely lines the edge of the promenade.

The ecology of the River Almond has also changed recently. It was badly polluted by effluent from paper mills and shale works but control of the pollution has cleaned the water so that salmon and sea trout now run up river. The return of the Kingfisher has also given much pleasure. The western slopes of the river bank have been clear-felled and replanted. The result is a mass of Thistles, Foxglove and grasses now growing amongst the tree-tubes.

Many old trees have come down on the eastern banks of the river, their roots undermined by erosion. The ground cover consists of Ground Elder, Herb Bennet and grasses and there are some garden escapes, such as Dame's Violet. Further upstream, the river widens. On its banks White Willow and a few Alders grow. The bed of the river is strewn with stone debris from the old mill lades: among them the Dipper and Grey Wagtail hunt for food. Mimulus grows at the water's edge.

M. Robertson

Smailholm Tower Crags, Kelso - 12 July 1986

For this joint visit with SWT, Kelso group, Mrs Margaret Little had kindly prepared both map and plant list for our benefit, so we split into groups and explored different aspects of Sandyknowe Crags.

Here we found Heath Bedstraw, Tormentil and Sheep's Sorrel, typical plants of grassy heathland. On the sunny slopes, carpets of pansies in all shades of colour from creamy-white to purple were in full flower. This interesting hybrid swarm has been identified as the offspring of Wild Pansy (*Viola tricolor*) with either Field Pansy (*Viola arvensis*) or Mountain Pansy (*Viola lutea*).

Along the rocky ledges of the crags we were delighted to find the Maiden Pink (*Dianthus deltoides*) as well as the Rockrose (*Helianthemum nummularium*, previously *chamaecistus*) growing with Thyme and Milkwort. One or two Harebells were also in flower.

On the poorer soil at the tops of the crags, members noted the effects of spraying on both Creeping and Spear Thistles and Buttercups. These plants were deformed in growth and mutilated, but surviving to set seed.

The marshy area at the foot of the crags and the pond produced some interesting species: Lesser Spearworth, Bogbean, Water Blinks (*Montia fontana*), Marsh Speedwell (*Veronica scutellata*), Ivy-leaved Crowfoot (*Ranunculus hederaceus*), Marsh Bedstraw (*Galium palustre*) and handsome Marsh Cinquefoil (*Potentilla palustris*). There were baby frogs and toads hopping or crawling underfoot and a family of moorhens called loudly from the rushes.

Owing to the dull, cloudy conditions we did not see butterflies but one member collected over thirty species of micro-moths and grass-moths for identification. Another member sought under stones for myriapods (centipedes and millipedes) and isopods (woodlice) for identification and recording.

Dr Mary Noble was delighted when members found the lovely Maiden Pink growing exactly where it had been described by Beatrix Potter in one of her letters.

Most of us visited Smailholm Tower, containing beautiful models of characters from the Border Ballads in which Sir Walter Scott took such an interest, his 'Minstrels of the Scottish Border' being published 1802-3. At nearby Sandyknowe Farm Sir Walter Scott's grandfather lived and farmed, and Sir Walter spent some of his childhood there.

Mrs Little revealed a small clump of Field Madder (*Sherardia arvensis*) which she had found hiding beneath nettles! We are pleased to learn that Smailholm is to be designated a SSSI to preserve its unique flora, habitat and historical interest.

Members greatly appreciated the preparation work undertaken by Mrs Little and her team. We would also thank the farmer, Mr Tom Stewart of Sandyknowe Farm, who kindly allowed us to park on his land. We had a good day.

M. Robertson

Ben Lui, Tyndrum - 19 July 1986

A poor weather forecast failed to deter those who had booked for the Ben Lui bus, or indeed the group who joined us by car at Glenorchy Crossing (where a bridge over the River Lochy gives access to the hills beyond). It was pretty bleak by the time the party disembarked (and rapidly donned windproofs and waterproofs) for the assault on the mountain ahead, but at least the worst held off until we were safely back in the bus.

A small group opted for a low-level walk, but for most the destination was the Ciochan Cliffs area of Ben Lui where outcrops of mica-schist occur. This involved a trek of several miles over rough, boggy ground, and an ascent of around a thousand feet. Diffiult going, and botanically rather dull, the dominant vegetation being Purple Moor Grass (*Molinia caerulea*) relieved occasionally by the purple of Bell Heather (*Erica cinerea*) or the paler pink of Cross-leaved Heath (*Erica tetralix*). *Erica cinerea* prefers dry ground while *Erica tetralix* likes wet areas, which were also brightened by golden spikes of Bog Asphodel (*Narthecium ossifragum*).

Among the more interesting plants of this wet acid terrain were Sundew (*Drosera rotundifolia*) and Butterwort (*Pinguicula vulgaris*), which grow in very boggy areas where little nutrition is available, and which supplement their diet by digesting the small flies they catch on their sticky leaves. Another interesting plant, one which prefers drier ground, was *Viviparous Fescue*

(*Festuca vivipara*), which indulges in a rather curious form of vegetative reproduction. Instead of producing flowers it grows young plants on its 'flower-head', which give it a rather shaggy look. The young plants, which eventually drop off and take root, are all clones of the parent, no genetic exchange having taken place.

Below Ciochan Cliffs there is a dramatic change in vegetation coinciding with the change from acid to basic soil. The cliffs and the flushes below them support a rich variety of alpine flowers, including the beautiful Mountain Avens (*Dryas octopetala*) and the rather less striking, but rarer Alpine Bartsia (*Bartsia alpina*). Roseroot (*Sedum rosea*) forms conspicuous blue-green patches on the cliffs and Mountain Sorrel (*Oxyria digyna*) is common in the wetter areas. Mats of Thyme (*Thymus praecox*) just coming into flower proved quite difficult to distinguish from Purple Saxifrage (*Saxifraga oppositifolia*) which was well over, but other saxifrages were easier to identify. Mossy Saxifrage (*Saxifraga hypnoides*) with its large white flowers and moss-like leaves was present on the cliffs, while Starry Saxifrage (*Saxifraga stellaris*) which has smaller pink-spotted flowers and a compact rosette of leaves could be found with Yellow Saxifrage (*Saxifraga aizoides*) in the flushes below.

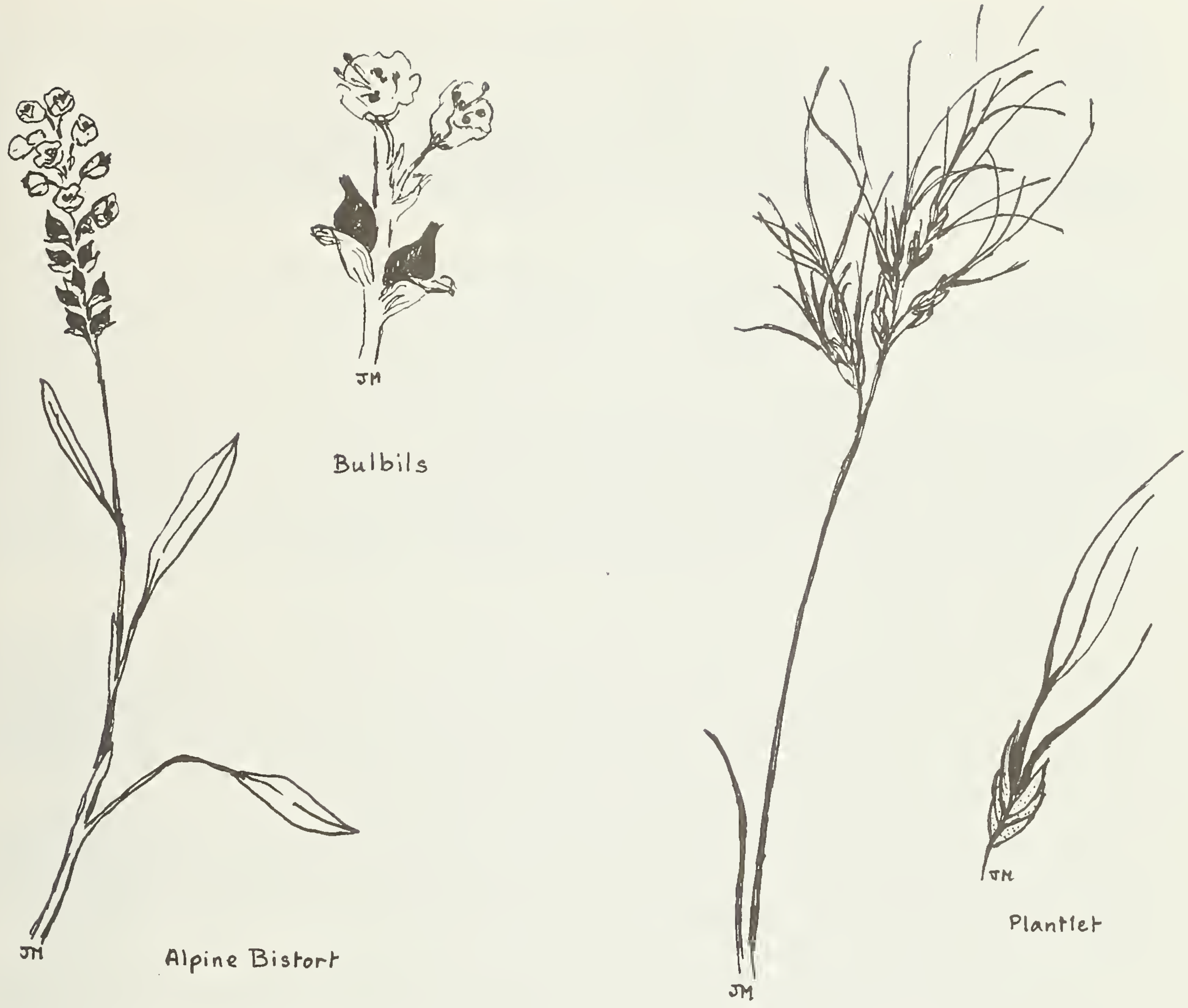
Alpine Bistort (*Polygonum viviparum*) provided another example of a 'viviparous' plant. In fact this plant hedges its bets by devoting part of its flower-spike to normal sexual reproduction and part to vegetative reproduction. The top of the flower-spike bears small white flowers which can be fertilised and set seed in the normal way, while the lower part of the spike grows tiny bulbs (bulbils) which are clones of the parent. (When I first started looking at alpines I could never understand why Alpine Bistort always had that 'gone-over' look!)

Interesting ferns included Moonwort (*Botrychium lunaria*), Holly Fern (*Polystichum lonchitis*) and Green Spleenwort (*Asplenium viride*) which looks very like the common Maidenhair Spleenwort except that it has a green instead of a black rachis (main stem). There was an abundance of Brittle Bladder Fern (*Cystopteris fragilis*), a common fern of basic rocks, often found on walls at lower levels; and some of the party reported finding the much rarer Mountain Bladder Fern (*Cystopteris montana*) which has a similar feathery look but is smaller and is triangular in outline. Sedges included the tall Black Alpine Sedge (*Carex atrata*) and the dainty Hair Sedge (*Carex capillaris*).

In addition to these and other 'alpines', Ben Lui cliffs provide a home for a number of plants with a maritime/alpine distribution, such as Thrift (*Armeria maritima*); and for many less specialised plants, such as Wood Cranesbill (*Geranium sylvaticum*) and Meadow Buttercup (*Ranunculus acris*), which are found in woodlands, wetlands or meadows at lower levels.

Our stay on the cliff face was all too short, though in view of the deteriorating weather it was perhaps as well we had to be back at the bus in good time. One of the first alpines we saw when approaching the cliffs was the Scottish Asphodel (*Tofieldia pusilla*), a charming little plant of wet base-rich areas, with a compact head of tiny white flowers; and to this we now said our farewells.

Birds seen included a Buzzard, a family of Ravens, and Whinchats and Wheatears. The low-level party saw a Heron, Sandpipers and Tree as well as Meadow Pipits. They had a pleasant walk along the old road, and noted Bell Heather and Cross-leaved Heath in flower - some of the flowers were white. They also saw Viviparous Fescue, and a number of plants such as Valerian



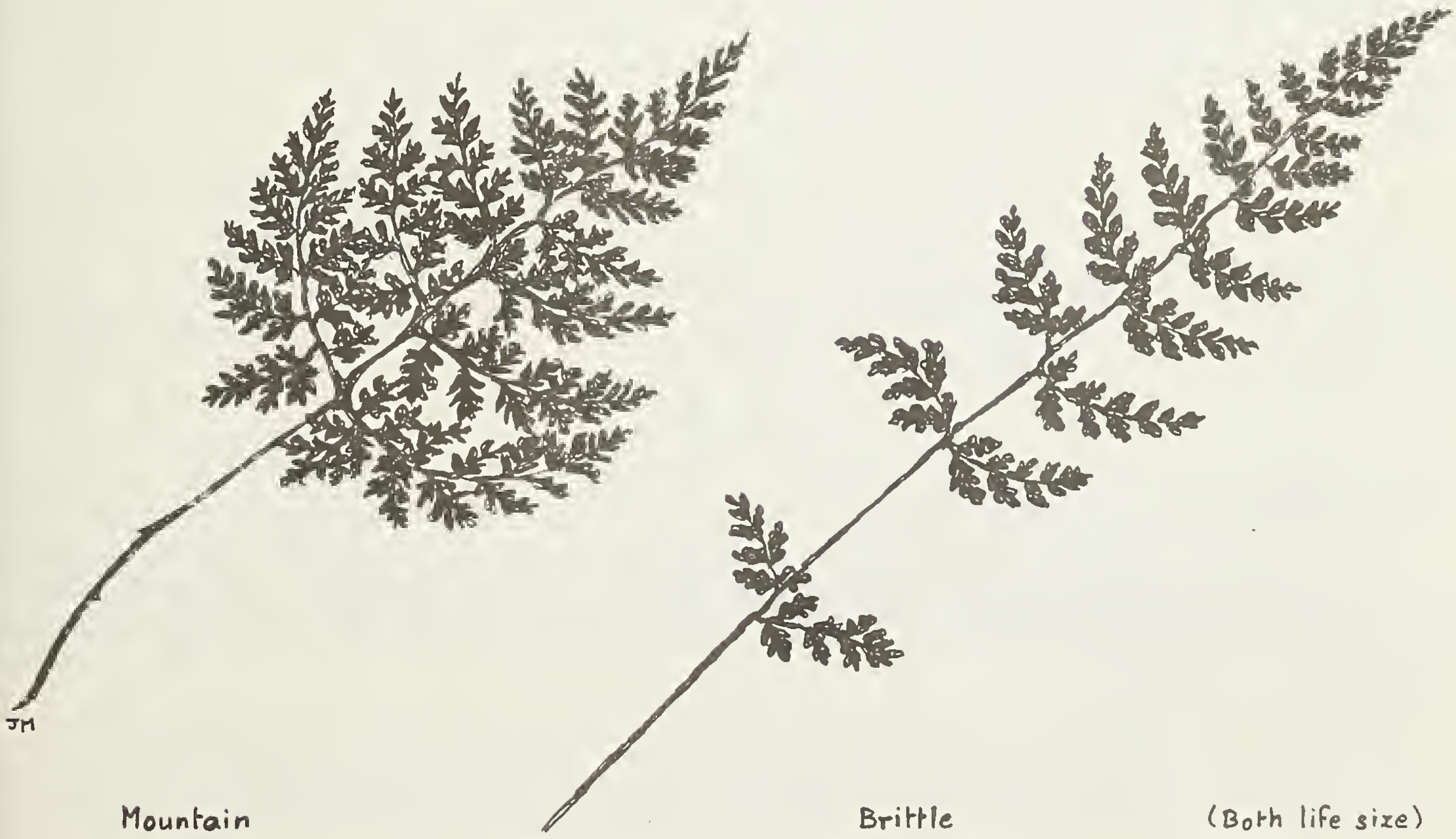
Bulbils

Alpine Bistort

Plantlet

Viviparous Fescue

Types of Viviparous Reproduction



Mountain
Bladder Fern

Brittle
Bladder Fern

(Both life size)

Bladder Ferns

(*Valeriana officinalis*), Gowans (*Leucanthemum vulgare*) and Hardhead (*Centaurea nigra*) not seen by the other group.

To conclude, I am told that one of the party who completed the trek to Ciochan Cliffs and back was aged 80. I certainly hope that when I reach my eightieth year I shall still have enough energy left to emulate him!

J. Muscott

Aberlady Bay - 26 July, 1986

Mr P. Gordon, Warden at Aberlady, first pointed out the somewhat insignificant looking Sea Hard-grass (*Parapholis strigosa*) which at Aberlady is approaching its northernmost limit, and then took us inland passed masses of aptly named Meadow Sweet (*Filipendula ulmaria*) in the damp places where Sedge Warblers were singing. Also in the marshy areas with low bushes there were Reed Buntings which in previous years had declined in numbers to 24 pairs and were now making a recovery. Some 30 pairs have been recorded this year.

Further inland on the short grass, masses of Common Centaury (*Centaurium erythraea*) were growing in vehicle tracks with Wild Thyme (*Thymus praecox*) making a colourful display between the tracks. It was near here that one of our more observant members found one specimen of Frog Orchid (*Coeloglossum viride*) which had not been recorded on the reserve for over ten years. We then spread out to look for others, but none was found.

When the excitement had died down we than proceeded to Gullane point for lunch and some bird watching. It was here that the leader saw again the Arctic Skua which was harassing the Terns and which had been in the area for some time.

We then turned again inland over the dunes and in one dune valley a piece of wood was lifted and Smooth Newts, juvenile Toads and Leeches were found.

On the way back to the bridge we were lucky to see Strawberry Clover (*Trifolium fragiferum*) in full flower.

Mr Gordon was an excellent leader and a most enjoyable day was had by all.

B. Gill

Almondell County Park, Midcalder - 30 July, 1986

The annual barbecue and moth-trapping was abandoned due to incessant rain.

Old St Boswells - 2 August 1986

In spite of the inclement weather a group of nine members had an interesting outing. Because of the very high southern bank of the Tweed and the well-grown woodland we were sheltered from the strong wind and heavy showers for most of the day.

After traversing the village, and a village has been here since the 10th century, we crossed the Haugh (presently the site of the golf course) and had a look at the Great Stonehouse. This is a shingle bank now well clothed with a variety of grasses and river plants. The whole area, Haugh and shingle bank, was formed after the great winter storm of 1742-43 when the Tweed altered its course so that rich meadow land once part of the Dryburgh estate, became part of the south bank.

The party walked upstream through hedgerow pathways and broad-leaved woodland. We watched Chaffinch, Spotted Flycatcher and Warblers feeding their young and had sight of river birds such as Heron, Goosander and Common Sandpiper.

There was a rich variety of flowering plants some of which provided quite spectacular effects. The large swathes of Great Bellflower (*Campanula latifolia*), both blue and white, were combined with creamy Meadow-sweet (*Filipendula ulmaria*), Rosebay Willowherb (*Chamaenerion augustifolium*, formerly *Epilobium augustifolium*) and handsome Codlins and Cream (*Epilobium hirsutum*).

V. McFarland

Bowhill, Buccleuch Estates, Selkirk, with the Botanical Society of Edinburgh and the British Plant Gall Society - 9 August, 1986

A party of about 24 met at Bowhill Bridge at 11 am to look for galls or to learn what galls are. Seeking galls is an ideal occupation for the slow-mover: we took about an hour and a half to cover 200 yards. Results were forthcoming and at least 17 species were found and identified.

Other items of natural history interest were not neglected, and many saw their first Scotch Argus butterfly (*Erebia aethiops*) and a fine specimen of a Horntail or Wood Wasp (*Urocerus gigas*), a fearsome-looking but harmless creature.

The outing ended after lunch and a further gall search, at a shed where the gardener had kindly set out a table on which specimens could be displayed.

C.P. Rawcliffe

Fungus Foray in the Old Oakwood at Dalkeith - 17 August, 1986

On a warm, sunny morning a small group of fungus hunters set out for the old oak woodland on the northern edge of the Nature Park in the grounds of Dalkeith House (formerly Dalkeith Palace). The group was led by Dr Roy Watling.

An early find was *Suillus grevillei* beside the path under a larch tree - not surprising since it is called the Larch Boletus. It is a good fungus for a beginner to attempt to identify since there are only ten *Suillus* listed in the British Fungus Flora. *Suillus grevillei* has a fairly bright yellow colour and a sticky cap with pale yellow tubes under it. The stem is yellow above a ring and cinnamon-coloured below. The fungus was named after Greville and is very common.

Moving across a field many *Panaeolus* and *Panaeolina* were found including *Panaeolus sphinctrinus*, a delicate bell-shaped fungus growing on dung. It has a fringe of white 'teeth' along the cap edge.

Once in among the trees our finds were many, including rarities such as *Inonotus dryadus* and *Calvatia utriformis*. Dr Watling regaled us with stories of the devil and oak trees with regard to the former and Skara Brae and the staunching of bleeding with regard to the latter. He has an inexhaustible supply of such stories which relate fungus to all areas of life.

We found many examples of *Fistulina hepatica* on the old oak trunks and stumps. This fungus is variously likened to beefsteak, ox tongue and liver.

The last finds on the outing were several examples of *Lepiota procera*, the parasol mushroom. The cap of this spectacular fungus is large and covered with dark shaggy scales.

In a rather poor fungus year this was certainly one of the best outings.

E. Smith

Tinto Hill, Symington - 23 August 1986

The party set off from the car park at Fallburn taking the main path south passed Fallburn Fort. A careful look around the enclosures of this ancient monument (Late First Millennium BC) failed to reveal any interesting plants but several fungi were collected for later examination. Further up the hill, Lesser Spearwort was seen in a recent drainage ditch. As we ascended, large areas of the pinky orange Felsite screes, for which Tinto is so well known, became more apparent. These screes contain very fine examples of the periglacial features known as 'stone stripes'. These lines of larger stones separated by bands of finer earthy material run down slope on the screes, at right angles to the contour lines. The 'stone stripes' on Tinto are the most southerly, and at the lowest altitude in the whole of Scotland. In the wet flush below the well at Grid 953 347 we were surprised to find Marsh Cinquefoil (*Potentilla palustris*). Near the summit of Tinto was a fine area of Cloudberry (*Rubus chamaemorus*) in fruit. Areas carpeted by the plant in this manner may well be clones of the one original plant.

Tinto Hill cairn at the summit is a late 3rd or Early 2nd Millennium BC Bronze Age site of considerable size. We descended about a hundred feet or so on the south side. Some solifluction lobes, further periglacial features, can be seen in this area but they are poorly developed.

The return to the starting point was via the large scree on the south side of Maurice's Cleuch where we disturbed a brace of grouse which had been feasting on abundant Blaeberries. A wet mossy spring produced New Zealand Willowherb (*Epilobium brunnescens*) and in its typical scree habitat Parsley Fern (*Cryptogramma crispa*). From the path just below Totherin Hill summit it was possible to pick out eskers and other glacial landforms on the low lying moorland to the north of Tinto. The whole area around Tinto was the centre of drainage disturbance in late glacial times and many indications of this can still be seen.

A patch of Marsh Thistle (*Cirsium palustre*) provided a view of several large (three-quarter inch) Ichneumon flies but these evaded capture. They were, however, of the *Amblyteles/Ichneumon* type.

A large pair of mating drone flies (*Volucella* sp.) were also seen on the thistles.

The considerable archaeological and geological significance of the Tinto area makes for an interesting walk at any time of the year.

B. Baird

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Abbey St Bathans, Berwickshire - 30 August, 1986

Torrential rains earlier in the week had made a full reconnaisance of the planned route impossible, so it was a great relief to find on arrival at Abbey St Bathans that the water had subsided. As we were setting off from the car park, a Sparrowhawk flew over, mobbed by a large flock of small birds, mainly House Martins. There were at least two further sightings of Sparrowhawks that day and three of Kestrels.

Our walk was first along the wooded banks of the Whiteadder, and over the Eller Burn. The body of a roe-deer was found near here, possibly a victim of the recent spate, and two other corpses seen in the course of the outing were of common shrew and hedgehog. Then we emerged on to the open hillsides of Cockburn Law and made our way, skirting marshes and heathery patches, to the Edinshall Broch, where we explored this fine example of a Pictish defensive tower with the 'ground floor' remarkable complete with individual cells, and where we stopped for lunch within the stone circle.

Descending towards the river again, we passed the 'wild wood', an area of ancient woodland containing Oaks, Downy Birch, Alder, Scots Pine and Holly, and with a field of grain on the other side of the path holding many of the common weeds of cultivation, our flower-list lengthened rapidly. The next section of the valley displayed very clearly the raised-beach effect of an earlier river-bed, before narrowing to a picturesque rocky gorge at Elba. Here we crossed the footbridge to the return paths on the north side of the Whiteadder. Conifer plantatations soon gave way to mixed woodland, and we noted a good amount of regeneration.

The woods thinned into parkland with a number of specimen trees, notably Cedars, as we neared the Retreat House, and there was a further fine belt of ancient oakwoods where the steep banks of the Whiteadder have apparently prevented grazing and exploitation. Then a steep path led us down to the bridge near the trout farm to complete an outing which, though not productive of any great rarities, was satisfyingly varied and interesting.

M. Watson

Hopetoun House, South Queensferry - 6 September 1986

The outing was organised as a Fungus Foray jointly by the Botanical Society of Edinburgh and the ENHS and Dr Philip Mason acted as leader. We were granted permission by the Administrator of the Hopetoun House Preservation Trust property to wander at will in the grounds and to have the use of the ballroom for the display of material. There was a morning session of searching until 12.30, when we lunched and set out our display, followed by a somewhat shorter search in the afternoon.

In spite of a pessimistic forecast due to 1986 being a poor fungus season, we found around 50 species although none were in any quantity and there were no rarities. In some parts of the grounds no specimens at all could be found.

C.P. Rawcliffe

Peebles Circuit - 13 September, 1986

Twenty-two members enjoyed a wonderful day atop the hills just south of Peebles.

Our route took us first through broad-leaved trees in the Gypsy Glen where we saw the foul smelling Woundwort (*Stachys sylvatica*) and also found a dead pigmy shrew. We crossed the Haystoun Burn and started a fairly steep climb up to the open moorland. On the hill we found a second corpse, this time of a common shrew. We passed the remains of an old fort, possibly dating back to the Iron Age. Beside it was a lovely rowan tree, heavy with scarlet berries. The view from here was extensive. Peebles, called Priorsford by O. Douglas, which was the pen name used by Anna Buchan (sister of John), could be seen lying beside the River Tweed and on the horizon, the Pentland Hills with the Moorfoots in between. Two ferns - the Male Fern (*Dryopteris filix-mas*) and the Broad Buckler-fern (*Dryopteris dilatata*) were growing side by side, affording examples of two-pinnate and three-pinnate leaves.

At this point two members fell behind the main party and saw a red squirrel (*Sciurus vulgaris leucourus*). The route followed the old drove road between two dry stane dykes and climbed up steadily to the top of Kailzie Hill. Lunch was taken resting in the heather in the lee of the dyke.

Back on our feet we kept climbing and found three different berries, Bilberry (*Vaccinium myrtillus*), Cowberry (*Vaccinium vitis-idaea*) and Crowberry (*Empetrum nigrum*). We reached the south-west tip of Cardrona Forest and at this point changed direction and turned sharp right and down the heather-clad slope to the valley where flows the Glensax Burn. Many people were sorry to leave the vista and the freedom of the high ridge.

As we descended, we put up a red grouse. Although the main ground cover was Heather (*Calluna vulgaris*), we did find both Bell Heather (*Erica cinerea*) and Cross-leaved Heath (*Erica tetralix*). We crossed the burn and gained the track which runs by its side. Some of the party were lucky enough to see a Heron standing poised, its head craned forward, on the opposite side. It took off lazily and flew downstream.

We reached Upper Newby Farm and where the track was crossed by a tributary stream, found a beautiful patch of red-spotted Blood-drop Emlets (*Mimulus luteus*) and beside it Water Forget-me-not (*Myosatis scorpioides*).

The track became a tarmac road and broad-leaved trees, Oak, Ash and Red-berried Elder came into view. Newby Farm was passed, then Haystoun House and all too soon we were within sight of the parked cars and the end of a perfect day.

J. Lyburn

Pentlands Circuit - 27 September, 1986

With most of the flowers over, our outing was essentially an exploratory walk through the south-west Pentland Hills, with the Covenanter's Grave on Black Law (1335 ft) being the highest point reached. It was too misty to see the distant hills of Ayrshire which the unfortunate man had wished his grave to be facing.

Many species of fungi were collected. The first Redwing of winter was seen as well as Pink-footed Geese flying overhead. We flushed a Snipe and there were a few grouse. The Lime trees were golden after frost and a Sugar Maple in the grounds of Garvald House, near Dolphinton, had scarlet leaves. We thanked Matron who had kindly allowed us to leave our cars in the grounds.

This was the last of the summer walks and there was a definite autumn nip in the air.

M. Robertson

Musselburgh Lagoons and Kilspindie - 15 November, 1986

The somewhat unsettled weather of the preceding days left the leader seriously wondering if it would ever change by 15 November! It did and what a beautiful sunny day it turned out to be.

It is difficult to count numbers on a double outing such as this but at least 30 members were in attendance - the majority all day, but some just on either the morning or afternoon walk.

The Firth of Forth is regarded as one of the outstanding areas for watching birds in Britain and some of our members making their first Lagoons appearance expressed amazement at the number of waders and gulls on the ash of the first lagoon - literally thousands. We arrived three hours before high tide, so with the incoming tide the waders were somewhat restless. On this lagoon there was nothing rare or even slightly unusual yet this was an ornithological experience not to be missed. Perfect light and our close proximity to the birds gave us tremendous views of the silver clouds of Knot, up for a moment and then settling again on the ash flanked by the less tightly packed flock of Bar-tailed Godwit. Turnstone, Dunlin, Redshank, Oyster Catcher and Curlew made their contribution but it was the aerial display of the Knot and Godwit that made this early part of our outing.

We then walked to the mouth of the Esk to look at Mallard, Wigeon, Eider and Goldeneye. We walked round the first lagoon by the side of the sea wall to the second lagoon now surrounded by high reinforced banks of soil and rock so that in effect in has become a man-made crater ready to take the next supply of ash which is piped in seawater solution from the Cockenzie power station. At this point we had good views of several Long-tailed Duck out in the Forth - the Musselburgh speciality.

Our circular walk took us along the top of the crater bank passing a flock of Linnet estimated at 200, feeding on the seed heads. And so back to that first lagoon. It was a peaceful place now with the thousands of birds roosting until the tide turned when the aerial displays would start again. Among the waders we identified five species of Gull, Greater Black-back, Lesser Black-back, Herring, Common and, the most numerous by far, the Black-headed.

After lunch we arrived on the shore behind Aberlady Church and immediately saw seven Brent Geese in the bay. Just before we reached the golf course, we had a repeat spectacle of the Musselburgh highlight - this time not Knot and Godwit, however, but Golden Plover and Lapwing. A huge flock of at least 1000 birds, mainly Golden Plover, spiralled above us clearly showing the contrast between the larger Lapwing and the sharper winged Golden Plover.

We watched Merganser and Shelduck but it was the Pink-footed Geese that provided the finale to this most enjoyable day as skein after skein dropped down to roost in Aberlady Bay.

C. Pountain

MALHAM TARN FIELD CENTRE - 30 May - 6 June, 1986

Sixteen members attended this study course at Malham in north Yorkshire where the staff kindly arranged a week of excursions and varied activity. Everyone appreciated and benefited from the course, in large part due to the leadership of senior tutor, Judith Allinson.

Day 1 : Malham Tarn, Malham Cove, Janet's Foss
" 2 : Field centre nature reserve
" 3 : Bolton Abbey woods
" 4 : Goredale Scar, Pen-y-ghent
" 5 : Gait Barrows, Leighton Moss RSPB reserve
" 6 : Ingleton limestone caves, Pecca falls

Malham Tarn is a shallow lake, maximum depth 14 ft, in magnificent limestone scenery at the heart of the Yorkshire Dales National Park. It lies on Silurian Shales at 1230 ft elevation. The adjacent Tarn Moss is a fen and bog area which has grown up on a site originally occupied by open water. The hydrosere and its processes were explained by our tutor: briefly, the aquatic community and Bottle Sedge (*Carex rostrata*) form a floating mat amongst which other plants can grow, giving rise to a rich fen community of many different species. A layer of organic material accumulates and the level of the ground rises so that eventually the soil is not in contact with the alkaline stream below. A poor fen community develops with sphagnum, Purple Moor-grass (*Molinia caerulea*) and Common Sedge (*Carex nigra*) predominating. The soil is waterlogged and becomes more acid so that peat bog plants only will grow with cotton grass, bog moss and heather on the drier parts. This is the climax community which begins to accumulate as peat.

On Saturday, 31 May, we set out on the walk to Malham Cove. Tiny Bird's-eye Primrose (*Primula farinosa*) was seen near the Field Centre. In a lecture we had learned of the rock formations to be seen on this outing and the features to look out for. Carboniferous Age rocks consisting of shale, sandstone and limestone in repeated layers with a topping of millstone grit, over a period of time have been submerged, uplifted, folded, faulted and denuded, then more recently glaciated, to produce the cliffs, scars, clints and grykes, coves and waterfalls we see today. We saw old watercourses and waterfalls which are now dried up, places where streams disappeared underground and where they reappeared, as at the foot of Malham Cove. We found Mountain Pansy (*Viola lutea*), Alpine Pennycress (*Thlaspi alpestre*), Salad

Burnet (*Sanguisorba minor*), Thyme-leaved Sandwort (*Arenaria serpyllifolia*), Shining Cranesbill (*Geranium lucidum*), Green Spleenwort (*Asplenium viride*) and Rue-leaved Saxifrage (*Saxifraga tridactylites*), and many more plants. On the limestone pavement, Judith showed us the rare Baneberry (*Actaea spicata*) with its white flowers.

Sunday, 1 June was occupied on the reserve.

Monday, 2 June was a glorious day. We motored to Bolton Abbey Wood, to meet Mr Colin Straker, the National Park Warden, who very kindly gave us the whole day and a slide show in the evening. Our botanists listed 140 plant species: we found Morel and St George's Mushroom and the bird watchers saw many different species. At Bolton Strid we watched solitary bees which had nested beside the path. At the start of the walk we watched Robin, Blue Tit, Great Tit, Chaffinch, Pied and Grey Wagtails, all exploiting the insect life on the banks of the River Wharfe. A male Pied Flycatcher was then seen and shortly afterwards, four female Goosanders and a Dipper. Soon we heard the reel of the Wood Warbler's song and identified him by his yellow breast and white underparts. Oak and Beech were the dominant tree species. We found Toothwort (*Lathraea squamaria*), Wood Melick (*Melica uniflora*) and both Herb Paris (*Paris quadrifolia*) and wild Lily-of-the-Valley (*Convallaria majalis*) in flower. In the afternoon we had good views of both male and female Redstarts and the Garden Warbler.

On Tuesday, 3 June we visited Goredale Scar where our tutor pointed out the deposits of tufa, formed by encrustations of calcium carbonate solidifying the algae on the rocks. In the afternoon some of us climbed Pen-y-Ghent (2273 ft) while others remained in the village of Horton-in-Ribblesdale. The plant life of Pen-y-Ghent is noteworthy, including plants of the Arctic flora on its summit. We found Purple Saxifrage (*Saxifraga oppositifolia*) still in flower, Yellow Mountain Saxifrage (*Saxifraga aizoides*), Roseroot (*Sedum rosea*) and Moschatel (*Adoxa moschatellina*). Weather was clear so we could see Helvellyn, 45 miles away, the Ingleborough range, Pendle and Morecambe Bay. We crossed Horton Moor and saw two large potholes, Hull Pot being very impressive. Ring Ouzels were seen here. The cavity in the limestone is 60 ft deep and measures 300 ft x 60 ft across the opening.

On Wednesday, 4 June we motored to Gait Barrows National Nature Reserve where we met Mr Tony Aldridge, the Warden. The limestone pavement of Gait Barrows is of exceptional botanical and geomorphological interest with its grykes (deep fissures), clints (individual limestone blocks), runnels (gutter-like features which drain into the grykes) and solution cups (isolated hollows on the surface of the clints).

The large lake, Hawes Water, is surrounded by Alder carr and yellow Water Lilies. We found the lovely grass, Mountain Melick (*Melica nutans*) the early flowering Spring Cinquefoil (*Potentilla tabernaemontani*), Dropwort (*Filipendula vulgaris*), Spring Sandwort (*Minuartia verna*) with its pink stamens, Hairy Rock-cress (*Arabis hirsuta*), Lily-of-the-Valley (*Convallaria majalis*), the Rigid Buckler Fern (*Dryopteris villarii*) and the notable rarity, Angular Solomon's Seal (*Polygonatum odoratum*). We also found Columbine (*Aquilegia vulgaris*), the Pale St John's Wort (*Hypericum montanum*) and the rare Dark-red Helleborine (*Epipachis atrorubens*), though I did not see a flowering spike. Blue-green algae found in some of the solution cups was fascinating. In the fen habitat were Hemp Agrimony (*Eupatorium cannabinum*), Northern Marsh Orchid (*Dactylorhiza purpurella*), Common Spotted Orchid (*D. fuchsii*) and the loveliest sight of all, the beautiful pink Bird's-eye Primrose (*Primula farinosa*) growing beside purple Butterwort (*Pinguicula vulgaris*).

In the morning of Thursday, 5 June we visited White Scar Caves, near Ingleton, to see the waterfalls and underground streams. In the afternoon we had a splendid walk up Ingleton Glen Nature Trail. We climbed beside the River Twiss to Pecca Falls with its seven waterfalls and to Thornton Force. There were many mosses, liverworts and the blue-green algae. We found Oak Fern (*Gynocarpium dryopteris*) and Hay-scented Buckler Fern (*Dryopteris aemula*). The uncommon Betony (*Betonica officinalis*) was pointed out to us. Dipper, Grey Wagtail and Willow Tit were seen. The gorge widened out and here were fine Oaks, Alder and Beech trees.

Above Pecca Bridge is the most spectacular section of the walk. On the bank opposite is a cave with a crack going straight below it. To the left of the crack are horizontal beds of light grey limestone rock. To the right of the crack is dark grey rock of crumbly slate. This is the North Craven Fault. At this point the vegetation changes as you leave the limestone and go on to the slate. Bracken becomes the dominant plant, with heather where it is drier.

We then went on to Yordas Cave. We put on waterproofs, wellies and protective helmets. Clutching our torches, we followed Judith through the cave entrance, down the muddy sloping floor until we came to the waterfall and underground stream. What a torrent! Cold and dark! We waded in water until we came to a gap in the wall through which we climbed and made our way out again. It was quite an experience for us all.

M. Robertson

Sunday, 1 June

On Sunday forenoon members were given an exercise, to study the Hydrosere of Malham Tarn inflow burn. (The succession of plants from aquatic habitats to dry land is known as a hydrosere.)

A line about 36 m long was laid across the area of inspection with the burn appearing 6 m along the line. One metre square frames, known as quadrants, were laid along the line, metre by metre. The quadrants were divided by string into 25 smaller squares.

All the species within the quadrant were listed, then for each species the number of smaller squares which contained that species were noted. This process is known as 'a belt transect'.

The results when tabulated showed the succession of plants on the north side of the burn went from aquatic through bottle sedge, rich fen, poor fen to peat bog and on the south side from aquatic, bottle sedge, poor fen to peat bog.

The pH of the soil within each quadrant was measured and this correlated with the succession of plants from aquatic at pH 7.8 to peat bot at pH 4.3. All the plants encountered were very common except Alpine Scurvy Grass (*Cochlearia pyrenaica*). Nearby was Marsh Rosemary (*Andromeda polifolia*).

In the afternoon some of the party searched in bog pools for invertebrates. A wide range of creatures was found and taken back to the lab for further investigation. The rest of the afternoon and evening was spent peering down the microscope. Most people were intrigued at seeing these creatures under magnification.

E. Gillespie

A 'nativity' of nests in Bolton Abbey Woods - Monday, 2 June

A Tree Creeper's nest in a hole in a tree.

A Redstart's in a nesting box.

A Pied Flycather's in a nesting box and another in a tree only a few feet away.

A Wood Warbler's in a bank by the path with four tiny speckled eggs.

B. Gill

The Malham Tarn Week

The Malham Tarn week was one of the most varied and interesting visits I have had with the Society. It was pleasant to walk through a part of the country in which my interest had been aroused from book illustrations and the television screen. The value of the week was increased by having as our guides both the senior tutor of the Field Centre and a local expert in ornithology. From the first person we were made aware of many fascinating facts about the geology and botany of the area.

The excursion on the first day in the Malham area was a most memorable start to the holiday as we walked through the most awe-inspiring landscape. Many features were seen - a steep-sided and narrow dry valley with a dry waterfall in it, a limestone pavement, the dramatic cliff face of Malham Cove and a river which disappeared into the ground and another one which came to the surface at the base of Malham Cove. Further walks took us through more breathtaking scenery, such as the rugged and towering Gordale Scar, a cliff face, not all of which was visible on approaching it. It was quite an experience as more and more of it was revealed as one turned each corner to walk further through the gorge. Then, suddenly there was the series of waterfalls above us, tumbling down over the tufa deposits. Looking at the top waterfall, the effect was heightened by it coming through a hole in the cliff wall.

The river valley above Ingleton village was also remarkable for its waterfalls at Pecca and Thornton Force. The setting of the Pecca Falls in a deep wooded gorge was most striking, as was that of Thornton Force in the more open country above. There was quite a contrast between the river above Thornton Force flowing slowly over a series of shallow ledges with the noise and rush of the water over the falls further down. Interesting features on this walk were the noticeable slant of the rock strata and the glacial deposit above Thornton Force which forced the river to flow around it. The most exciting experience was when we went underground in both a cave open to the public and in one not open to them. It was quite an adventure going through the second one, hearing the sound of rushing water somewhere in the semi-darkness, walking towards it and then seeing a waterfall looming above us in the torchlight. The stalactites and stalagmites in the public cave were really beautiful. They were all shapes and sizes. The waterfalls in this cave passage were also quite inspiring. There is something particularly mysterious and thrilling about underground rivers in the way one comes upon them suddenly and then sees them appearing from inaccessible areas beyond.

One of the highlights for me was the walk up to the top of Pen-y-Ghent from which there were magnificent views and also the subsequent walk down to Horton, on which we passed a most spectacular chasm with sheer sides and also a dry valley with miniature cliff faces which might have had water flowing over them once. This chasm was really an elongated but large hole in the ground with water flowing along the bottom of it. Previously water must have fallen over the edge of it to the depths below, as there was a dry river bed finishing on the uphill side of the chasm.

Of our sightings of animals, one of the most vivid was the appearance of a water shrew on the path beside the RSBP reserve at Leighton Moss. The total absorption of this tiny creature with its own affairs to the extent of not being put off by our presence on the path was most amusing. Beside the lakeside in the same reserve there was a most enthralling spectacle of a heron being mobbed by a flock of gulls and other birds from the neighbouring area, as it floated to and fro. It was quite a sight seeing the Heron fending off the other birds with its beak and wings, at times twisting and bringing its neck right down. There was also the booming of an unseen Bittern to add to the interest. Another most fortunate sighting was that of some Pied Flycatchers going in and out of both a natural hole in a tree and a bird box in Bolton Abbey Wood. One of the most amazing landforms we saw was the limestone pavements. It was their immense expanse and the plant life growing in virtually every crack, some of them quite deep that made them so amazing and unique.

Finally, there was a great deal of fun and good spirits between everybody. I think the caving expedition was a good example of this. To me all these things were the highlights which made the holiday memorable.

R.S.C. Clark

ISLAY FIELD CENTRE - 23-27 OCTOBER 1986

The Islay Field Centre was opened in May 1986. The self-catering accommodation can hold 15 people. The reference room and library are open to visitors and the files on natural history in Islay are available for consultation and study. There is a small exhibition and saltwater fish tank. The Director is Dr Malcolm A. Ogilvie, an expert on geese and wetland birds, who has been associated with the island since 1962.

Ten members of the Society took a short study course under his guidance to learn about the winter migration and breeding biology of the Barnacle and Greenland White-fronted Geese. We hope we may have contributed to this little-studied area and produced new records for mosses, lichens, fungi and myriapods on Islay.

The stormy weather confined us to the cars more than we would have liked. On the other hand, the geese ignore parked vehicles so we observed their behaviour without disturbing them. Most of the Barnacle Geese (*Branta leucopsis*) (about 20,000) had arrived. They formed large flocks feeding on grassland or coastal saltings. We were able to pick out family groups. The markings on the goslings are a paler version of the adults until the white edging of the wing coverts grows in. The neck is less glossy black and the face pattern is a bit smudgy. We saw some aggression, a parent bird driving off a gosling from a neighbouring family encroaching on its feeding area. One adult remains alert while the rest of its family is feeding. They have a very rapid pecking action estimated at two hundred pecks per minute. They keep up a constant vocal communication within the flock. The voice is a short, sharp bark not unlike the yap of a small dog.

About half of the Greenland White-fronted Geese (*Anser albifrons flavirostris*) had arrived. It is one of the rarest sub-species of goose with a total population of about sixteen thousand birds. The entire world population breeds in south-west Greenland. One half of them winters in Ireland, the other half in Scotland, the most important site being Islay. Small numbers fly to Wales. The Whitefront is larger than the Barnacle. It has a grey-brown body, orange legs and orange bill. There is a band of white feathers round the base of the upper mandible, hence its name. The underside has a variable degree of black barring. The juveniles lack both the white front and the black belly markings. The voice is more musical than the Barnacle and the call is usually disyllabic. Whitefronts form very small flocks and are therefore harder to find. On migration the geese use Iceland as a staging post and make the second half of the journey towards the end of October. They can make the journey to Islay in 11 hours covering a distance of 1050 km.

On Thursday, 23 October we explored the Loch Gruinart area where the RSPB reserve and farm are situated. There were a few families of Whitefronts amongst the Barnacles on Gruinart Flats. The RSPB plan to improve this grassland in order to attract the geese from neighbouring farmland and so reduce the damage done to crops.

We watched groups of Whooper Swans landing on Loch Gruinart. Later we counted a group of thirty-six resting on the mud, asleep, this being their normal behaviour after their long flight from Iceland. There were Wigeon and Curlew on the shore as well as a few seals pulled out of the water.

Friday brought heavy rain. We spent the afternoon at the Museum in Port Charlotte. When the weather cleared we walked along the cliffs at Machir Bay where a spectacular blow hole sends up a fine cascade of spray.

Saturday brought north-west gales so we explored the sheltered south-east side of the island round Claggain Bay. Dr Ogilvie led us through natural woodland of Birch, Willow, Rowan, Alder and Oak which has grown over abandoned 'lazy beds', to find Wilson's Filmy Fern (*Hymenophyllum wilsonii*).

Sunday morning was calm and sunny but not for long! We motored to Loch Indaal where we saw a large flock of Scaup, mostly females and juveniles, and watched them diving for shell-fish. There was a large flock of Eider, crooning and displaying. Dr Ogilvie explained that Eider find mates at the beginning of winter. In the distance were six Long-tailed Duck (four male and two immature birds), Golden-eye and Wigeon were close in-shore and six pale-bellied Brent geese plus the resident Emperor Goose from Alaska, with its white head and yellow legs.

After lunch we moved to Port Ellen and walked along the shore of Laggan Bay, a fine sandy beach about four miles long. Among the rocks we found many shells, large scallops, tiny cowries, trough and carpet shells, dog and common whelks, topshells, limpets and Chinaman's hats. Or were they Dutchman's bonnets? Some of us were lucky to see a male Hen Harrier over Duich Moss and members in the other car reported a Merlin sitting on a post near the airfield. Large flocks of newly arrived Redwing were seen and we saw Stonechat on the moorland heather. Gravestones, walls, trees, dead branches and fence posts were all festooned with mosses and lichens and we were delighted to find Rusty-back Fern (*Ceterach officinarum*). The dying Purple Moor-grass (*Molinia caerulea*) had turned a tawny colour making a beautiful landscape over the blanket bog, with the darker brown bracken and autumn tints of the woodland adding to its glory.

Detailed lists of species seen are with our Records Keeper. We are grateful to Dr Ogilvie for sharing his knowledge with us and for taking us to many areas we would not have found by ourselves. We wish him and his family much happiness in their life on Islay.

M. Robertson

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EDITORIAL

Although 1987 will be remembered for yet another disappointing summer with a shortfall of sunshine and settled weather, the Society can look back on a good year of both indoor and outdoor activity.

A note from the Treasurer warns of a necessary future rise in subscription rates but this is a small penalty to pay for the full programme of indoor winter meetings and summer outings that is made available to members. We are indebted to the Excursion Committee under the convenership of Mrs Mary Robertson for the planning and preparation of these weekly outdoor meetings which in 1987 were augmented by week-long study courses based at Betws-y-coed in north Wales and at Strathpeffer in the Highlands.

In addition to the winter programme of monthly lectures the Society made use of its meeting place at Donaldson's School for the Deaf at Haymarket. Being so centrally placed and with ample car parking this is a convenient location. Mrs Ena Gillespie supervised the provision of study facilities for members throughout the summer and the opportunity was taken of holding indoor talks on a number of topics to supplement Saturday outings which dealt with the same subjects.

In this edition of the Journal we have an up-to-date discussion on the Pentland Hills by Dr John Sheldon which emphasises the need for constant awareness of changes in land use. Charles Rawcliffe explains how a group of Society members has been engaged as Rangers in the grounds of Hopetoun House for the past decade. Our Secretary, Mrs Connie Stewart, paints a clear picture of a part of East Anglia which she knows so well and Jackie Muscott presents readers with a challenge and an opportunity to become better acquainted with some of our grasses. Not many members visit Papua New Guinea but one of our young members, Andrew Lyburn, is now working there and he has sent us some observations on the exotic Birds of Paradise.

Our thanks to all these authors and to all the contributors to the Journal. A word of appreciation is also due to the members of the Journal Committee who help so much in its preparation.

Longstanding members of the Society will remember Mrs Janie Walker who died in November. Janie was an active participant in Society activities during the early 1970s.

NEW ANNUAL SUBSCRIPTION RATES

For four years now the General Fund of the Society has been in deficit, using up the money accumulated over previous good years. The raising of the subscription in October 1986 did not clear this, as was hoped, due mostly to rising costs. It is therefore with regret that we have found it necessary to increase the subscription in October 1988. The new rates will be:

Members aged 18 and over	£6.00
Husband-and-Wife Members	£10.00
Members under 18	£1.00

On written application only, a rate of £4.00 is available to pensioners.

B. Gill
Honorary Treasurer

WINTER INDOOR MEETINGS - 1987

JANUARY: Dr Philip Smith from the Department of Botany, University of Edinburgh, addressed the meeting on the Botanical Survey which is now being made of the Lothians.

He explained that a system had been established whereby one square kilometre in every four had been selected from the Lothian area for survey and over 170 helpers had been assisting by studying these squares. As well as recording flowers and their habitats, ferns, mosses and other growing things were noted and the aim was to produce a complete botanical survey rather than just a flora of the area. Computers were being used in compiling the survey and this meant that many different aspects could be correlated, e.g. does under-ground water or oil have an influence on plant life? Old maps were being studied to ascertain the different land uses which have existed over a period. Specialist subjects would be handled by experts and help had already been enlisted for fungi, mosses and liverworts.

Dr Smith stated that much interest was being shown in the project, not only from naturalists but also from politicians who may be guided in planning for the future. The meeting was impressed by the comprehensive and scientific way in which the survey was being planned.

FEBRUARY: Mr Ray Murray who is Recorder in the Borders for the S.O.C. and who is also in charge of Outdoor Education in that area, spoke to the Society on 'Border Birds'.

Mr Murray's enthusiasm for his subject was felt by the audience as he described the different habitats in the area from the Tweedsmuir hills with heather, grass and lochs to the coast around St Abb's Head where sea-birds nest and other off-shore birds are to be seen.

He showed how farming techniques could influence the bird population and that, because of the care taken by shepherds, there was now less carrion for ravens and other birds of prey.

Aerial views of parts of the Borders were shown and this gave a new perspective to those who only knew the area from the ground and helped them get a wider picture of conditions which exist. He explained how forestry influenced wildlife, encouraging it when the trees were first planted but that when they became bigger and thicker little could live in the undergrowth.

Mr Murray spoke in detail about the sites at St Abb's Head where sea-birds nested and the Hirsel where shovelers bred and where the woods around the Loch are rich in other bird life.

MARCH: Mr Kenneth Simpson spoke on 'Soil and Plant Relationships in South-east Scotland'. He impressed the meeting with his knowledge of and keen interest in his subject. His lecture concentrated on upland soils found over 900 feet which are made up of podsol, peat, brown earth and grey soil. On the podsol, conifers could grow but also much heathland existed. On the brown soils which had been enriched by humus and where good drainage could take place there was grassland or broadleaved forest. In the podsols, through chemical reaction, a layer of iron pan may be laid down which is impervious to water and if the trees planted are to succeed, this layer must be broken up otherwise the root system is very spread out and shallow.

Leaching takes place as a result of water filtering through the soil carrying plant nutrients into the subsoil. The relative acidity of the soil has a great influence on the types of plants growing on it.

Man can have an effect on the soil by his use of fertilisers and weedkillers which should be used with care as our soil is a very precious heritage which can easily be spoiled.

APRIL: Members' Night. Mr Alisdair Godfrey from the Lothians Conservation Volunteers, spoke about the work done by the organisation such as clearing rhododendrons, planting trees, clearing rubbish, attending to the tree nursery, digging ponds and assisting in Sea Buckthorn control at the John Muir Country Park. He thanked the Society for the donation from the Gunn Fund which had been used for the purchase of equipment to help in this work.

THE GUNN PHOTOGRAPHIC COMPETITION

This is the fifth year of this competition. Entries were at a disappointingly low level and more support for the competition is looked for in the future. The judge was Mr Gordon Finnie.

RESULTS

	Print Section	Slide Section
1st	May Hoy, *"Poppy and Hoverflies"*	Karen Cleland, *"Male Green Woodpecker with Begging Chicks"*
2nd	Ena Gillespie, *"Common Blue Butterfly"*	Kathleen Manson, *"Bark of Sweet Chestnut"*
3rd	Margaret Mitchell, *"Bracket Fungus"*	Ena Gillespie, *"Robin"*

These photographs are reproduced on pages 5 and 6.

April:

Mr and Mrs Manson showed slides taken while on holiday in Norfolk. They gave many interesting facts during their commentary.

Miss J. Muscott showed slides taken in the Spanish Pyrenees. The slides of insects and flowers were excellent.

Mrs E. Gillespie showed slides taken in North Yorkshire where the Society spent a week at Malham Field Centre in 1986.

Mrs V. McFarland showed a selection of Orchid slides taken from the collection of the late Miss Janet Raeburn which had been gifted to the Society. Miss Raeburn's slides are held in our room at Donaldson's School and may be used by members.

Mr D. Gill announced the winners of the Gunn Photographic Competition and showed the winning entries.

OCTOBER: Mrs E. Farquharson gave an account of a recent holiday spent in Greece under the title of 'April in the Peloponnese'. She explained that owing to a severe spell of weather there before her arrival, the flowers were very late and the result of frost damage was to be seen throughout the tour.

Pictures were shown of the Corinth Canal, which was the first stop of the tour, and of some of the interesting orchids and plants which grew at the top of the deep cutting. From Olympia she showed the carpet of colour due to the anemones and cranesbill which covered the sides of the original Olympic Stadium as well as the ruins of the Temple of Zeus which gave accommodation to lizards and bats in the fallen stones.

Visits were paid to Vassai and slides were shown of parts of the frieze from the Temple of Apollo which is now housed in the British Museum.

Other places visited were Pylos, Navarino Bay and Methoni with its lovely Venetian Castle and sea views. From Pylos the route taken was through the earthquake-devastated area around Kalamate, through the high mountain pass, where the vegetation was very different from that on the plains, and then through modern Sparta to Mistra. In the gorge at Mistra beautiful cyclamen, honesty and orchids were found and on the hill the ruins of the Castro and numerous Byzantine churches were seen.

At Monemvasia a Monastery crowned a steep rock on the lower slopes of which was an old town, much of which was in ruins, but with a rich natural fauna of giant fennel, asphodels and poppies.

Gunn Photographic Competition 1987

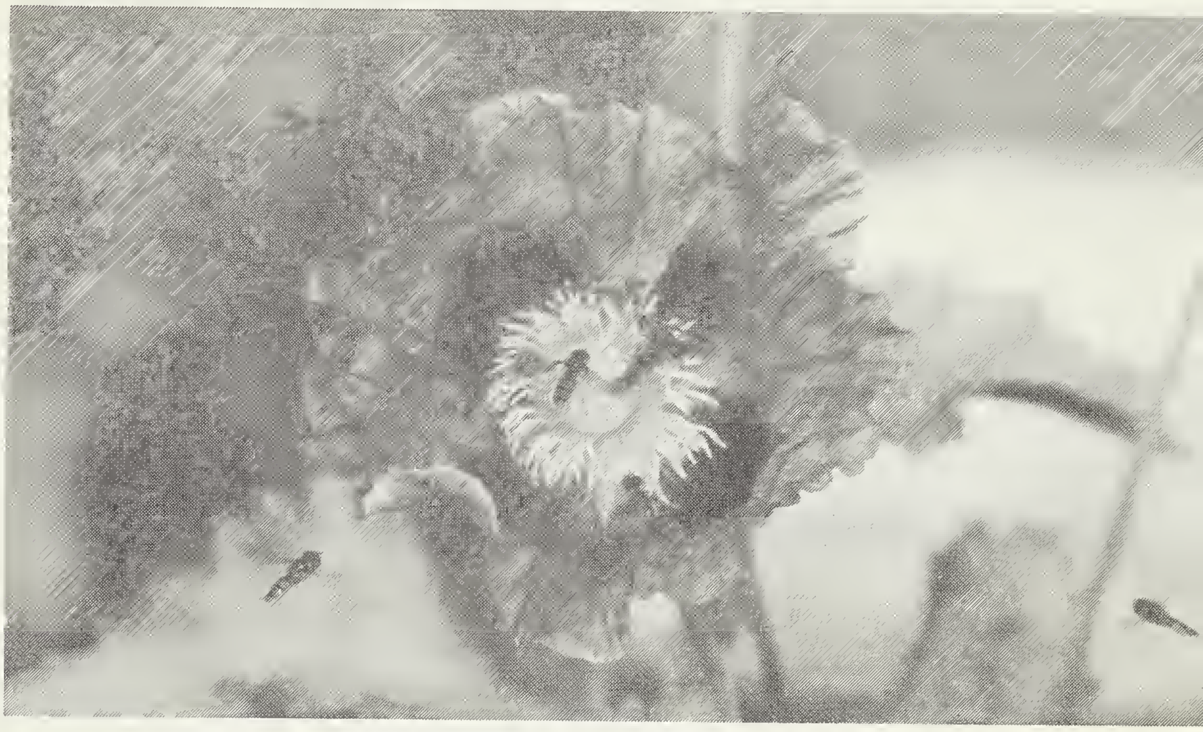
Print Entries

First Place

Poppy and Hoverflies

by

M. Hoy



Second Place

Common Blue Butterfly

by

E. Gillespie

Third Place

Bracket Fungus

by

M. Mitchell

Gunn Photographic Competition 1987

Slide Entries

First Place

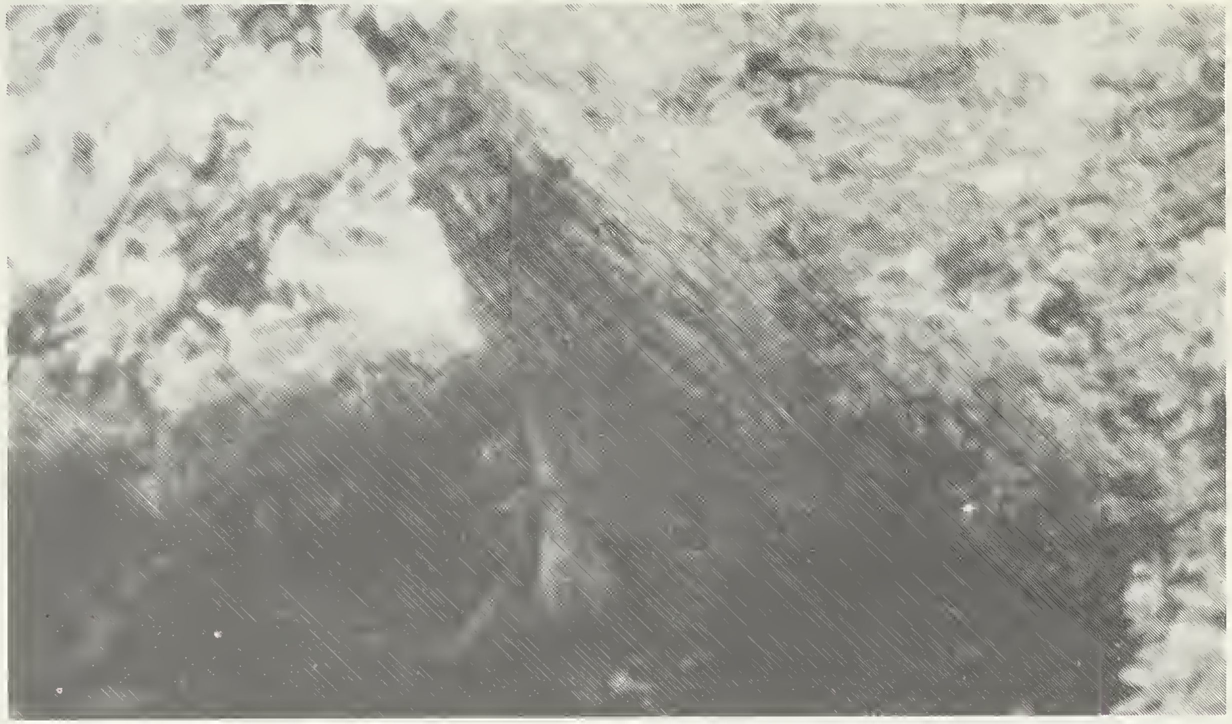
Male Green Woodpecker with Begging Chicks by K. Cleland

Second Place

Bark of Sweet Chestnut

by

K. Manson

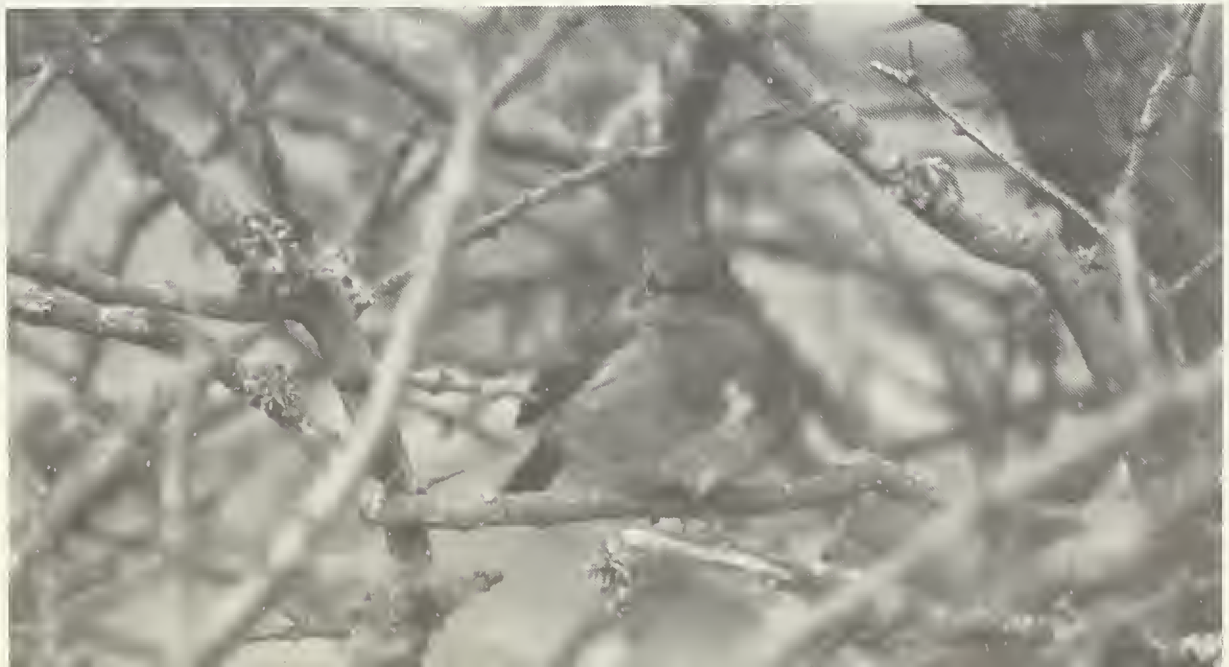


Third Place

Robin

by

E. Gillespie



The last part of the tour was centred on Tolon near Nauplion and visits were made to Epidauros, Mycenae and Tiryns where much of interest was to be seen.

Mrs Farquharson's slides showed the beauty of the Peloponnese and gave an insight into the area which many will want to follow up with a visit of their own.

NOVEMBER: Mr Sandy Mitchell from Strathpeffer, who is a professional guide to the Highlands, took us on 'A Hebridian Journey'. With excellent slides to illustrate his talk we were taken to many of the larger islands and quite a few of the smaller and less well-known ones. He described the main features of the Islands and explained the geological formations, and how, through the centuries in certain places the level of the coastline had changed leaving as evidence tree stumps submerged below the water. A general picture of the wildlife of the area was given and we were shown how existing conditions affected the life of the people of the Hebrides. The beauty of this part of Scotland was stressed and it was a privilege to be taken there by such an enthusiast.

DECEMBER: Dr Nigel Easterbee works for the Nature Conservancy Council and is one of a group who study small mammals. His special field is that of the wild-cat and he has been gathering information on their distribution throughout Scotland.

There are three groups of wild-cat, the European, the African and the Asiatic, the latter being found only in China.

Long ago when the country was covered with forests the wild-cat roamed unrestricted, but as these forests were felled and the human population expanded and sport such as grouse shooting developed, conditions became unfavourable and the number of wild cats diminished considerably. The lowest ebb was in about 1915 but during World War I the gamekeepers were called up and the cats began to flourish again. After the War reafforestation was started and this favoured further their resurgence.

Because of its shy and nocturnal habits it is difficult to study the wild-cat by personal observation, and the help of foresters, farmers and naturalists has to be called in. Observations of tracks which can be seen clearly in snow are reported to the Nature Conservancy Council and so an overall picture of distribution can be built up.

It is difficult to differentiate between the real wild-cats and the feral cats and a great deal of investigation is being made with blood samples and work on genetics in order to establish the real difference.

Dr Easterbee invited questions from the audience and it was clear from the quality of the questions asked how much the lecture had been appreciated.

S. Litteljohn

THE PENTLANDS - THE NEED FOR CONSERVATION

The literary references of writers such as Sir Walter Scott and Robert Louis Stevenson, illustrate the inspiration that is provided by the spectacular backdrop that the Pentland Hills give to Edinburgh.

Both as a physical division which cuts through the Lothian coastal plain, and as the principal topographical feature of virtually all views from approaches into and across the region, the Pentlands dominate the Lothian countryside.

Their scenic importance might be considered to be derived more from their dominance and isolation in the coastal plain, and their proximity to Edinburgh, than their own particular character. But the hillscape, stretching from the very edge of the City for some 27 km, is without doubt a valuable combination of hill, valley, woodland and man-made lochs and for this it merits particular conservation effort.

It is clear from the remains of birch in peat deposits and fragmentary relict deciduous woodlands in some ungrazed valleys that deciduous woodland once covered these hills. The grazing of sheep, and tree felling to provide more grazing, has long destroyed this natural vegetation cover. What is now seen as characteristic of centuries of sheep rearing is degraded vegetation associations, heather restricted to the less agriculturally productive ground, and woodlands planted largely in the last century for shelter.

Man's influence in the Pentlands has been virtually total, and continuously determined by the economic influences of the time. The loss of tree cover is one aspect. The reclamation of grazing, primarily through draining, burning, and the application of lime during the last century, created a productive and healthy agricultural landscape albeit far different from the original scene. However, through lack of maintenance as a consequence of manpower costs, and reduced investment through various economic downturns, much of this land has returned to a degraded state to add to the impoverished ecological character of the hills.

The hills do possess representative areas which contribute to considerable habitat diversity from the wetlands and open water of the reservoirs, to the broadleaf woodlands, shelter belts, coniferous forests, and the heather moorlands above the hill grasslands. Although not spectacular for its wild life quality, it is these numerous local features that add considerably to the wildlife variety and landscape character of the Pentlands.

The need for a positive conservation strategy for the Pentlands becomes very clear when considered against the forces of change that will arise in the future. As a consequence, whatever one's views are with regard to the designation of the Pentlands as a "Regional Park", it would be fair to suggest that the fundamental needs for conservation of the natural resources of these hills must be viewed as the primary objective.

Within the area of the Pentlands designated a "Regional Park" there are at present three Sites of Special Scientific Interest (SSSIs). One of these, which is part of the Balerno Common site, includes the Bavelaw Marsh Nature Reserve, managed by the Regional Council. The two others, one a botanical site and the other a primarily geological site, are in private ownership. Other sites are being considered for designation one of which, Harperrig Reservoir, is to be confirmed an SSSI for its ornithological importance.

The Scottish Wildlife Trust, in its register of wildlife sites in the Pentlands based on habitat survey work, has identified twelve important localities which include, as individual sites or as parts of others, four of the Regional Council's reservoirs. In addition the Trust manages the Red Moss Nature Reserve which adjoins Bavelaw Marsh, and Erraid Wood which adjoins Hillend Country Park. The latter is a reserve where importance is laid on its educational role.

In 1976 a vegetation survey of the Pentlands was commissioned by the Regional Council. This identified other sites of wildlife importance which, in relation to management and protection, will also require particular attention. However, it has to be noted that not covered in any of these surveys are the geological and geomorphological features of the hills, which are just as important in relation to protection, interpretation and education. It is necessary to gather further information on these particularly where measures may be required to discourage public access, collecting or physical damage.

The Nature Conservancy has a specific role in relation to designated SSSIs, while the Scottish Wildlife Trust has notified all owners of the Pentland wildlife sites of the values which have been identified there. Unlike the SSSIs, subsequent conservation of these and of any other habitats of wildlife value can only be of a voluntary nature and will depend on the attitude of the landowners.

The requirements of present-day agriculture have changed and just as drystone dykes largely built during the Napoleonic war period have been allowed to deteriorate, so now new reclamation schemes are undertaken on a more selective basis to meet modern hill sheep farming needs. In the Pentlands, as elsewhere, economic factors have dictated the pattern of land use. While this has generally guided an expanding industry, future influences through the Common Agricultural Policy (CAP), adopted by the EEC, may well check production and dictate further changes to the landscape and its wildlife.

The greater awareness of farmers, the efforts of the Lothian Farming, Forestry and Wildlife Advisory Group, the advisory role of the East of Scotland College of Agriculture and changes in capital grant administered by the Department of Agriculture and Fisheries for Scotland, will continue to stimulate a greater understanding of nature conservation and the effect of agricultural management practices on wildlife.

But it would be foolish to forget that it is the agricultural economy which will largely dictate the ability of farmers to implement conservation measures, not just their sympathy. The effects of the CAP on agriculture in the Pentlands will depend as much upon decisions on other commodities as on specific support and market trends which will influence the trade in sheep meat, which is the principal end product of Pentland farms. The scenario will not be clear for many years but the prospect must be realised of the potential for land use changes, particularly with forestry being considered as an alternative land use.

The woodland cover of the hills is presently sparse - about 5% of the land area. Other than recently planted commercial plantations of conifers, particularly west of Harperrig, the woodlands are of broadleaved species planted in the 18th and 19th centuries. As such they reflect the favourites of the day in that beech is a dominant species but also with sycamore, lime, and some native oak and elm, the nurse crop of conifers having been largely lost.

Planted for amenity and shelter, some woodlands were established with sensitivity for the landscape while the planting of formal shelter belts which were innovative at the time and a contribution to the agricultural improvers' movement, are rigid features on the hillside as can be seen above Easter Howgate. Yet, when viewed at closer quarters the historically important shelter belts above Bavelaw add considerable character to the lower hill slopes.

There is potential in the Pentlands for afforestation and it is the influence of the Common Agricultural Policy of the EEC that may have the greatest effect on the trend towards forestry in these hills as in other uplands. With investors seeking to place money in forestry, which through land sale releases money for investment on the farm units for land improvement or shelter belts, forestry is now becoming a greater land use issue in the uplands.

It might be argued that in the Pentlands more tree planting, sympathetically integrated with a high component of native hardwoods, would add significantly to the diversity of wildlife habitat. However, without sensitive planning the results could be the opposite and if there are real issues of potential conflict then perhaps this is best seen on the grouse moors.

On some of the farms an integral part of the economy exists in the management of the heather moorland for grouse. Much of the heather in the Pentlands has in the past been degraded by over-burning and grazing. But, where continuous grouse management practices have been retained, valuable moorlands remain with, in addition, particular nature conservation and landscape values.

Provided these prime heather moors continue to be managed for grouse and sheep then these tracts of upland will remain unchanged. But, pressures on the moors, grouse management problems, and the actual economic viability of grouse moorlands, are factors that are finely balanced and forestry might become an attractive alternative for the owners.

The public and political debate on the future of the countryside is now vigorous and emotive. Without doubt, future changes in land use through to the next century will be as important as that which began at the end of the 18th century, when the land improvers influenced radical changes on the landscape. But, in contrast to a movement to improve agricultural production the changes will be governed by a need to reduce production.

The designation of the Pentland Park was not reached without considerable opposition but the opportunities that it presents for active conservation must be considered against the resource that exists and the changes in the economy of upland farming. If the Pentlands are worth such a conservation effort then there has never been such a need as there is now.

Dr J.C. Sheldon
Regional Ecologist

HOPETOUN HOUSE RANGERS, 1977-1987

For ten summer seasons three members of the ENHS (Isobel MacLean, Joe Carlyle and Charles Rawcliffe) have worked as Countryside Rangers at Hopetoun House, near South Queensferry. A fourth member, Mary Robertson, augmented the staff in 1985. Our original remit was to guide visitors on the 14-post Nature Trail, and to inaugurate and maintain a Wildlife Exhibition. To help us start we had the excellent trail guide, *Habitat*, written by the Scottish Wildlife Trust members who devised the trail in 1973. From the grooms' quarters, now disused, we scrounged tables and chairs, and from the 100 acres of grounds we ingathered specimens. We had the use of two tack-rooms; the outer one accommodated the exhibition, whilst the inner became office/workshop/store/rest-room. During the first winter, track lighting and wall display boarding was installed, grant-aided by the Countryside Commission for Scotland who were, with the Hopetoun House Preservation Trust, our employers.

The exhibition quickly grew with help from visitors and grants from BP Educational Services. The Quiz Board that Janet Raeburn gave us has proved very popular. There was a sand box for children to make animal footprints, and later 'Toad Hall' and 'Frog Cottage'. The exhibition had to be left open while we were on trail, so we adopted a policy of 'Please Touch'. Very few items were stolen, though in 1987 our Toad (*Bufo bufo*) introduced in 1980, was taken, most likely by some misguided animal liberationist. During the first year the trail guide '*Habitat*' was rewritten in a shortened folding form.

For many years the Red Deer herd had the run of the North Deer Park, and each April we collected the cast antlers. This changed when the park was divided into two halves, pens were built, lung-worm treated, breeding controlled and culling organised. What we have now is a herd that is healthy, but more like farm stock than wild. Early attempts at pulling Ragwort (*Senecio jacobaea*), though back-breaking, were of little benefit and spraying has only been partly successful in eliminating this poisonous plant.

From the first day a log was kept of weather, visitors and observations, and species records were built up. Over 1270 species have now been recorded with the aid of expert assistance for fungi, insects, lichens, molluscs and spiders. Other tasks came our way; planting, trimming, maintenance, policing and collecting litter. During 1986 the 14 trail posts were replaced.

Originally it was thought that two full trails could be done in five hours, which is why we were employed from 1 pm till 6 pm. Experience showed that this was not feasible. Nobody came at 1 o'clock to be guided, so we either met them in the exhibition or went out on trail to invite them. On average, 2500 were guided yearly, of whom about 20% did the full trail. The most popular walk was out along the Sea Walk overlooking the North Deer Park (the views across the Forth never fail to impress), then back along Hope's Walk. For some a walk to see the Red Deer was sufficient.

It did not take long to realise the conflict of opinion between the Gardener and the Naturalist. The former cuts, mows, sprays, fells and opens up paths, whereas the latter would mostly leave well alone, happy to see weeds and insects thriving. Some sort of balance was reached.

We all carry happy memories of visitors, from home and overseas, of lively schoolchildren and superb teachers. For my part I'll treasure the best and discard the few disappointments: weighed that way Hopetoun gave me a decade of pleasure.

C.P. Rawcliffe

NORFOLK

The first thing you notice on entering Norfolk is the great skyscapes. The land is gently undulating, exposed to the sea on two sides and with a dry climate. Although it is a cereal, sugar beet and fruit growing area, Norfolk has unique habitats for wildlife - the coastal salt marshes, the Broadland and the dry sandy Breckland and pine forests.

On the north coast in summer the shingle banks, which protect the salt marsh are covered with sea campion, sea pea, thrift and horned poppy whose deep roots help to hold the shingle. Behind the banks are lagoons and marsh where shelduck, teal, gulls and in certain locations, the beautiful avocets breed. You may hear the jingling song of bearded tits and always the constant song of reed and sedge warblers. On the long sand spits, common and sandwich terns nest in huge colonies, while common seals lie out on the sandbanks. Graylings, common blues, brimstones and sometimes clouded yellow butterflies flit among the sand dunes, while in August the salt marsh is a mauve haze of sea lavender. In winter great flocks of brent geese fly in, also pinkfeet and thousands of plover, duck and waders. The salt marsh is then an inhospitable place exposed to the north wind straight from the Arctic.

The inland marshes, rivers and open water in the east of the county are known as Broadland. The Broads are a series of medieval peat diggings which have filled with water from the slow-moving rivers to make a network of waterways. The water level is controlled by pumps and windmills. The waterways were fringed with reeds and a great variety of water plants, but sadly, owing to pollution from pleasure boats and leaching of fertilisers from nearby fields, fewer plants remain on the main routes. However along the lesser dykes you may find the rare water soldier with its three-petalled flower briefly open, frogbit, flowering rush, purple loosestrife and water lilies, while on the marsh grow valerian, hemp agrimony, yellow loosestrife, ragged robin, meadow thistle, marsh mallow, southern and early marsh orchids and occasionally marsh helleborine. Butterflies abound, gatekeepers, peacocks, red admirals and small tortoiseshells along with damselflies and sometimes the rare Norfolk aeshna dragonfly. This is the only British home of the swallowtail butterfly, whose caterpillar feeds on milk parsley, a very local plant. Sedge and reed warblers sing in the great reed beds. Reeds and saw sedge are harvested to use for thatching. On the open water you may see big flocks of coot and duck feeding. Herons and marsh harriers fly low over the reeds, but bitterns have become very rare. Swallows and martins hawk over the rivers and yellow wagtails and lapwings feed on the grass. In winter, big flocks of pinkfeet and greylags fly in and in one location the rather rare bean geese spend the winter. Plover, wigeon and mallard feed on the marsh and sometimes hen harriers hunt over the reeds.

The Breckland in the west of the county is of light sandy soil, subject to erosion. In the past belts of pine were planted, stabilising the soil. Much of this part is now planted with the biggest pine forest in England. In Neolithic times flints were mined from the underlying chalk and made into tools. The heathland has its own special plants, spiked speedwell, spanish catchfly, breckland artemisia and maiden pink. Stone curlew nest on the bare sandy soil and are carefully guarded. At another reserve hawfinches appear regularly, also wheatears, whinchats and nightjars. The breck is dotted with shallow meres which attract dabchicks and grebe. In the forest rides, skippers, speckled woods, red and white admiral butterflies flit while the forest is home to roe and red deer and fox.

While there are many reserves and areas for wildlife, do not forget that Norfolk is perhaps the foremost agricultural county in the country.

C. Stewart

TROUBLE WITH GRASSES: GETTING STARTED

A lot of people have trouble identifying grasses, chiefly because being wind-pollinated they have not developed big showy flowers to attract the attention of insects (and incidentally, humans). Their flowers are usually small, inconspicuous and basic, consisting simply of male and female organs which protrude at flowering time, but which are otherwise enclosed in nondescript green scales. The stigmas, or female organs, are usually white and furry but not very obvious even when they do protrude. The anthers, or male organs, are more conspicuous however; when ripe they hang out on slender filaments to catch the breeze and may clothe the whole flower spike in a cream or purple haze.

It is not necessary to catch grasses in full bloom in order to identify them, though they can be surprisingly attractive at this time. Grasses are distinguished firstly by looking at the overall structure of the flower spike, then at subsidiary spikelets, individual flowers and other vegetative characteristics. Some species are quite easy to sort out once you know what to look for and what the likely sources of confusion are. Unless you have very sharp eyesight a lens will be necessary.

The aim of this article is to deal with half a dozen or so common grasses which are relatively easy to identify and which can be found on most roadside verges in the Lothians - or at least in the nearest meadow.

1. COCKSFOOT (*Dactylis glomerata*)

This is probably the easiest of all grasses to identify - and you don't need a lens. It's a robust plant with quite broad leaves (it makes a mess of a lawn), about 3 feet high and with a large flower head, which as a bonus often remains intact throughout the winter, so the plant is recognisable virtually all year round. The flower spike is illustrated in Figure 1; the only other grass with a flower at all like it is Reed Canary Grass (*Phalaris arundinacea*), which is otherwise very different. Reed Canary Grass will only be found with its feet in water by streams and lochs; it occurs in dense leafy clumps several feet high, and looks a bit like a smaller version of the Common Reed. It is illustrated on the right-hand side of Figure 1.

Occasionally in late summer a vivparous form of Cocksfoot may be found (also illustrated), with young plantlets growing on the flower spike instead of seeds. Most grasses can reproduce like this when under stress, but Cocksfoot seems to do so more often than most. The young plantlets are clones of the parent and can take root immediately.

Cocksfoot flowers from June to September and can be found on virtually any roadside verge, bank, field, waste area, etc.

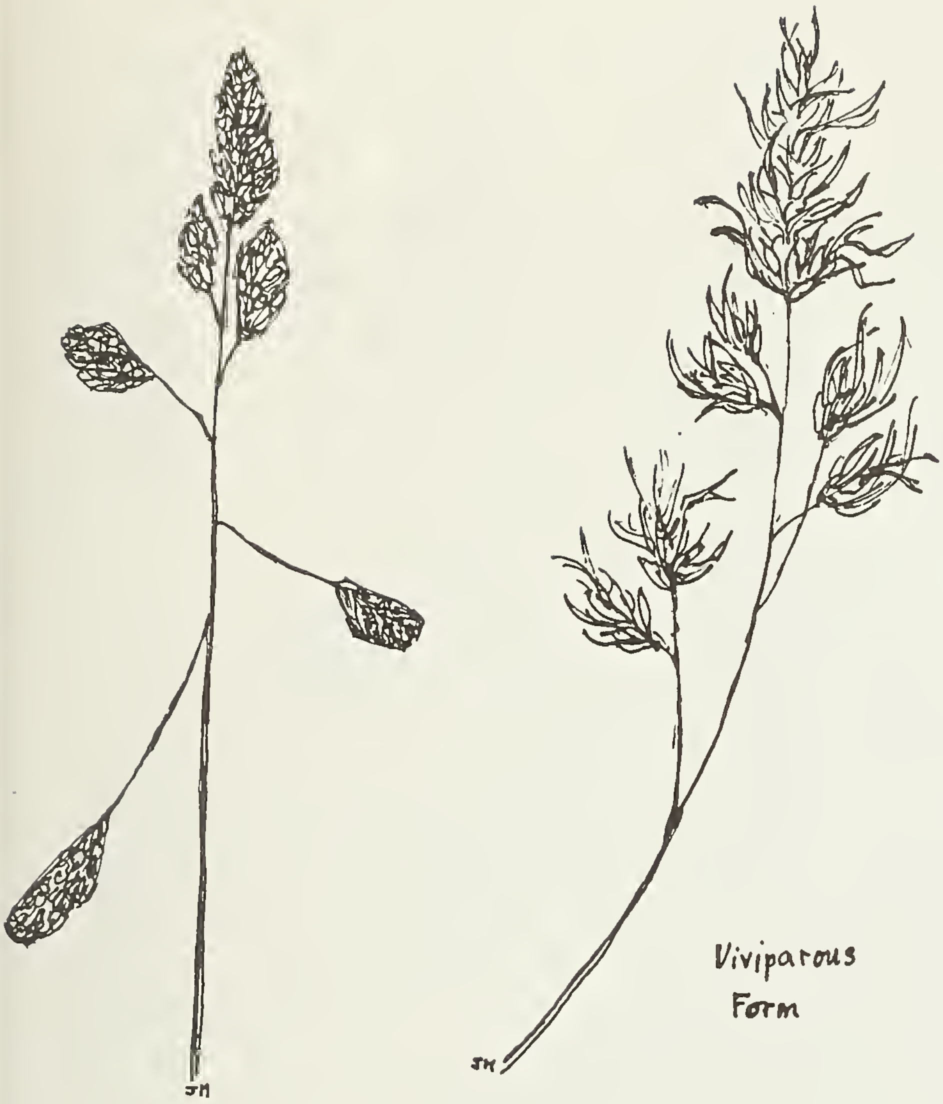
2. CRESTED DOGSTAIL (*Cynosurus cristatus*)

This is another very distinct grass, though much smaller and slenderer than Cocksfoot, and one that is more likely to be found in grazing land than on roadside verges. The flower spike of Crested Dogstail is one-sided, with a 'parting' down the back - see Figure 2. This may not be quite so obvious when the flower is fully expanded and the spikelets fan out round the back, but a closer look will reveal that the flower spike consists of fan-like spikelets attached in rows of four to the 'front' of the stem. No other British grass has this structure.

Crested Dogstail is generally about a foot high and can be found in most grassland; it flowers from June to August, but the seed heads can persist in recognisable form into the winter.

3. FALSE OAT-GRASS (*Arrhenatherum elatius*)

This is another very common grass of roadside verges and waste places. It has a long flowering period - June to September, and is rarely below 3 feet in height, usually nearer 5. The general structure of the flower spike and individual spikelets is shown in Figure 3; note that the really distinctive feature of this plant is the **single long awn**. There are a number of other plants with a



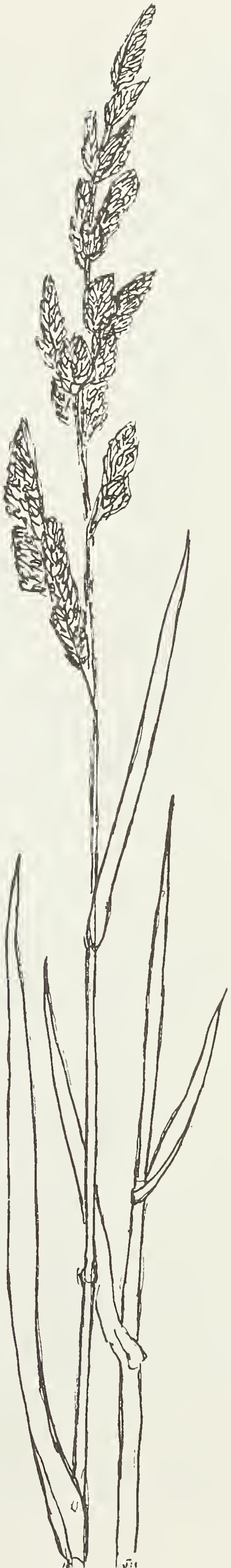


FIGURE 1: Cocksfoot (above) and Reed Canary Grass (right).

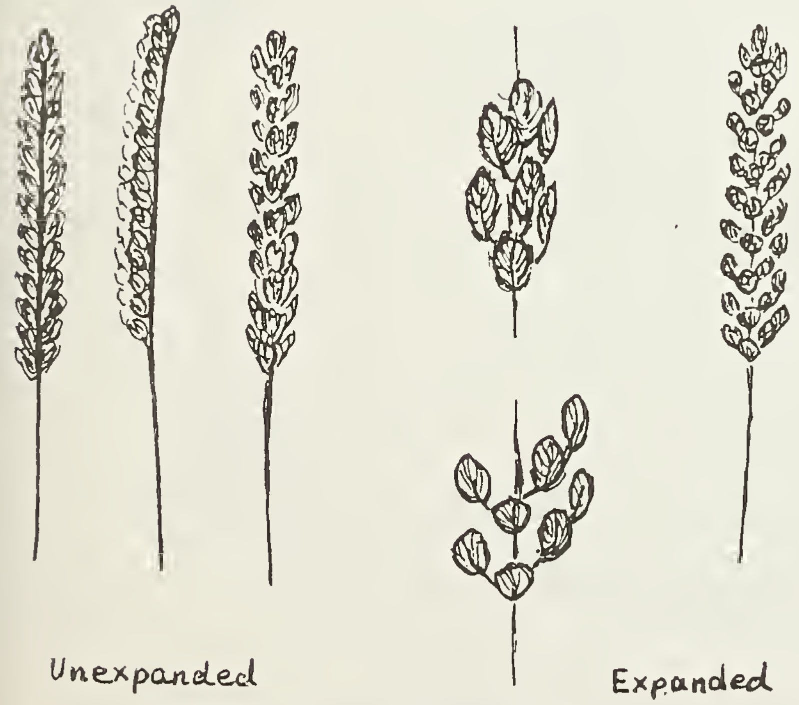


FIGURE 2: Crested Dogstail.

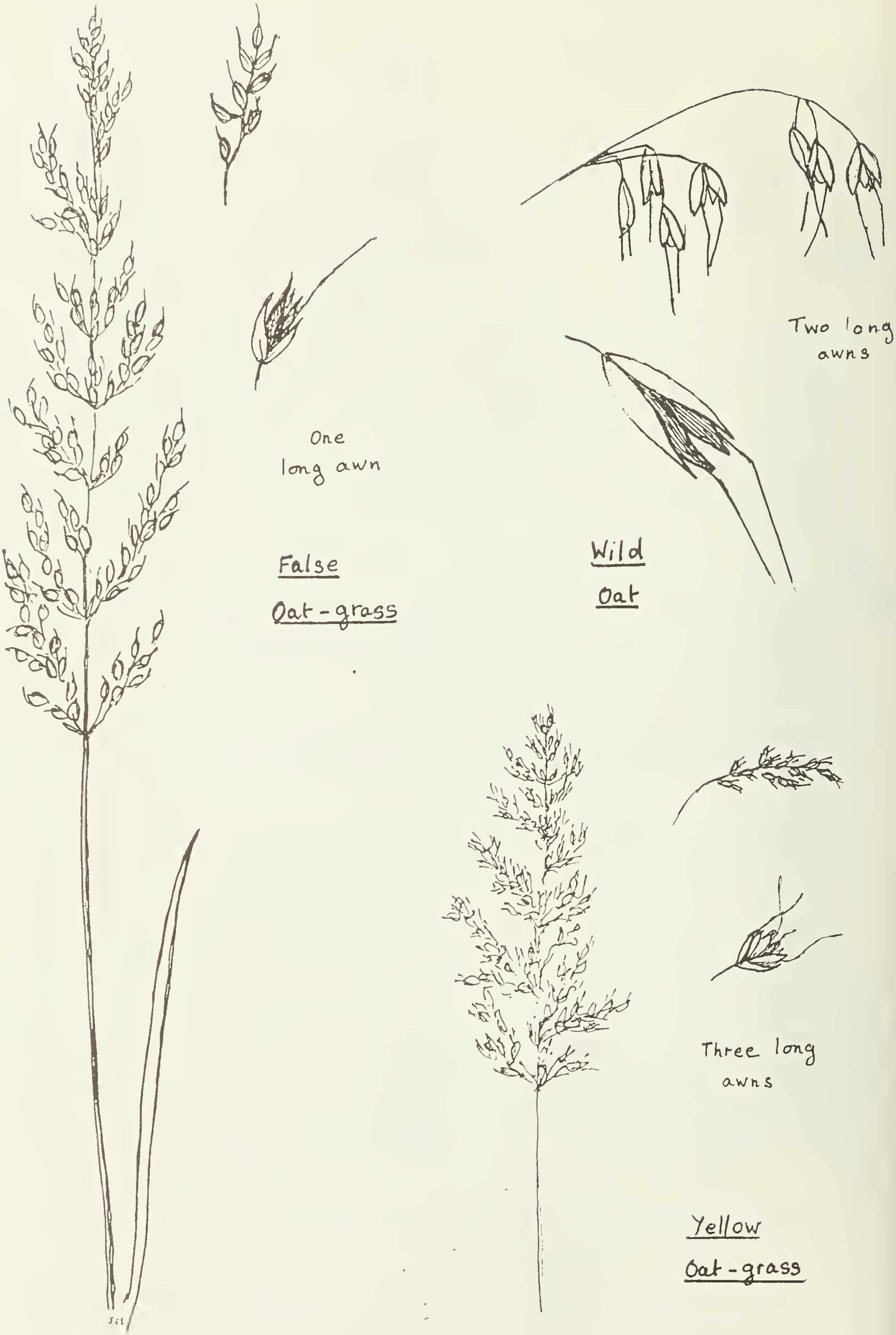


FIGURE 3: False Oat-grass (left), Wild Oat (above right), Yellow Oat-grass (right).

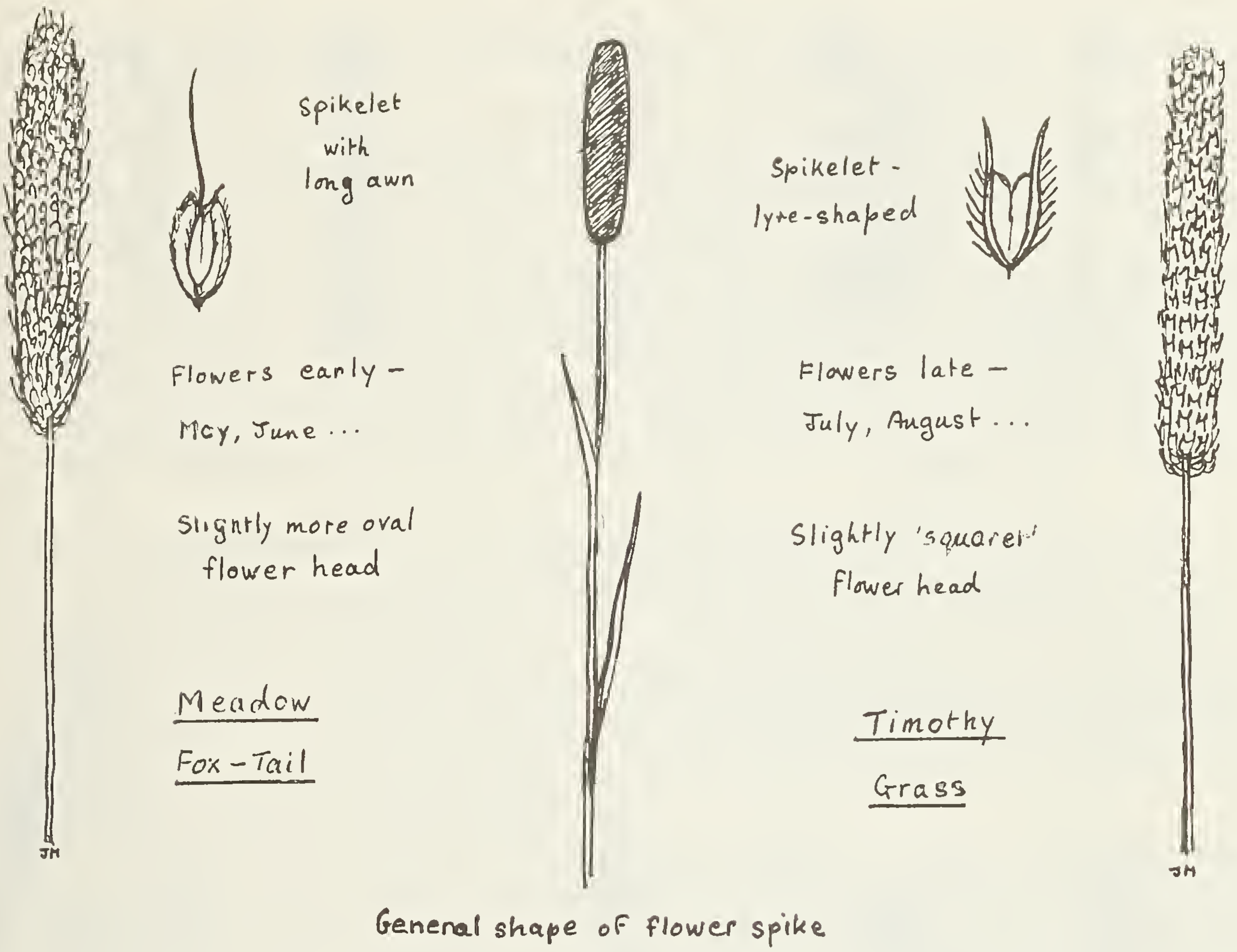

Spikelet with long awn
Flowers early – May, June ...
Slightly more oval flower head
Meadow Fox-Tail
Spikelet - lyre-shaped
Flowers late – July, August ...
Slightly 'squarer' flower head
Timothy Grass
General shape of flower spike
JH
JH

FIGURE 4: Foxtails and Catstails.

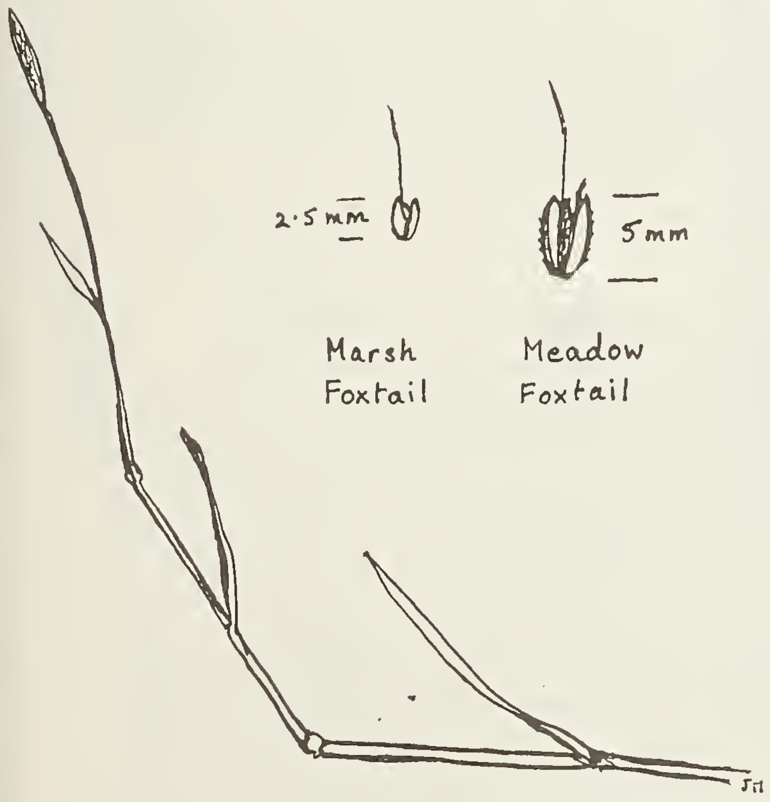


FIGURE 5: Marsh Foxtail.

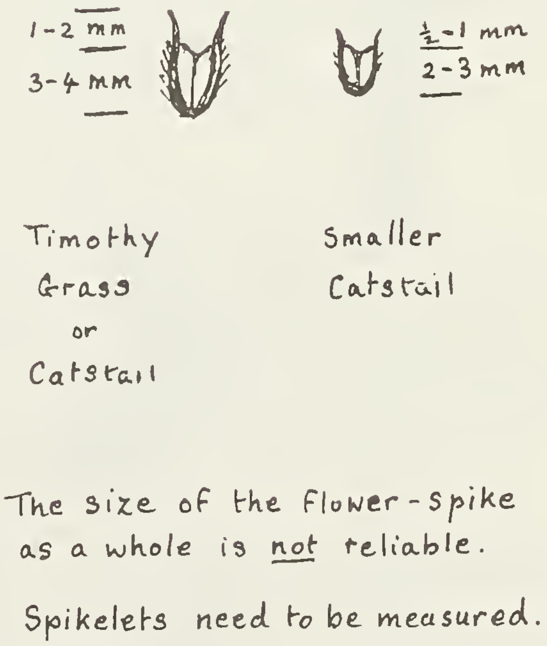

1-2 mm
3-4 mm
½-1 mm
2-3 mm
Timothy Grass or Catstail
Smaller Catstail
The size of the flower-spike as a whole is not reliable.
Spikelets need to be measured.

FIGURE 6: Smaller Catstail.

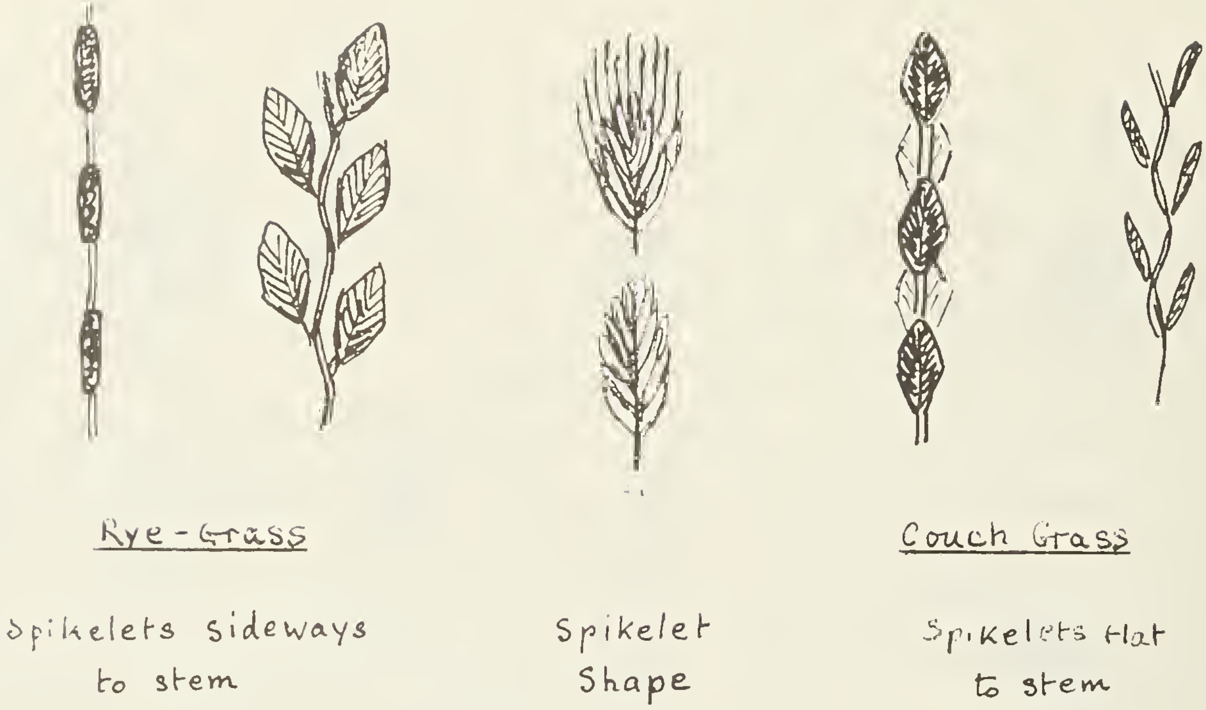


FIGURE 7: Rye-grasses and Couch Grasses.

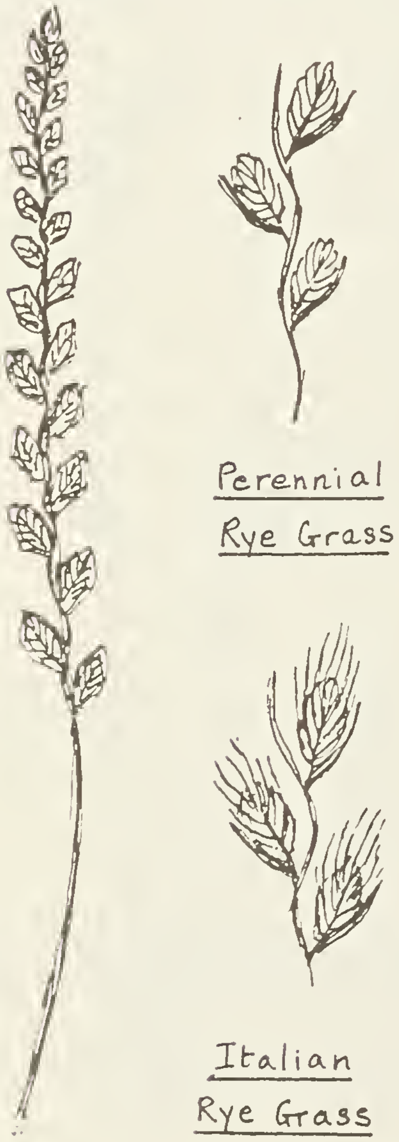


FIGURE 8: Italian Rye-grass.

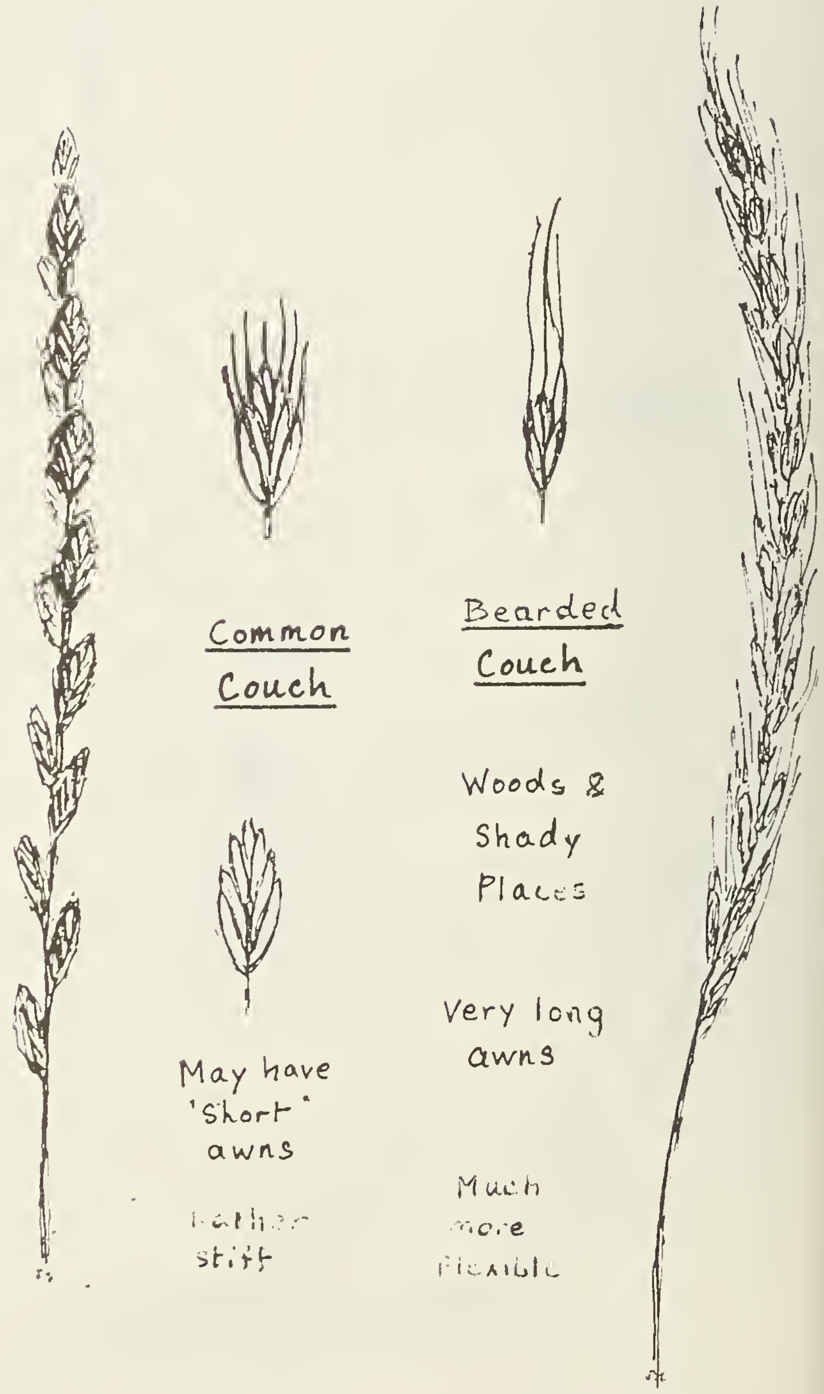


FIGURE 9: Bearded Couch.

somewhat similar structure, but in all cases the spikelets have two or more awns. Two of them are also illustrated for comparison.

Common Wild Oat (*Avena fatua) h*as fewer and much bigger spikelets than False Oat (the illustrations are roughly to scale) and it usually has **two** (occasionally three) awns. It is not uncommon, but is more likely to be found as a weed in a cornfield than on a roadside verge. It stands about 3.5 feet high and flowers quite late - July to September.

Yellow Oat-grass (*Trisetum flavescens*) is smaller and more fragile-looking than either of the other two, and much more likely to be overlooked. It is usually between 1 and 2 feet high and has a rather feathery appearance because the spikelets, though relatively small, have so many awns (three on average). As its Latin name (*flavescens*) suggests the plant often has a yellowish sheen. It flowers mainly in June and July and prefers basic soils, so it is not so common as False Oat-grass, but can be found on suitable roadside verges and other grassland.

4. MEADOW FOXTAIL (*Alopecurus pratensis*), TIMOTHY (*Phleum pratense*)

Foxtails and Timothy Grasses (or Catstails as the latter are sometimes called) have a very similar overall structure, which leads to confusion. The flower-heads of both are dense cylindrical spikes. However the detailed structure is quite different and they obligingly flower at different times of year. If it is early in the year it is almost certainly Meadow Foxtail, if it is late it is probably Timothy. However there is an overlap, and the detailed structure of the two plants is shown in Figure 4. Meadow Foxtail spikelets are asymmetric with one very long awn and one much shorter one; Timothy spikelets are symmetrical and lyre-shaped.

There is another Foxtail which is quite common in parts of the Lothians. This is Marsh Foxtail (*Alopecurus geniculatus*), which as its name suggests is only to be found in wet places, though a badly drained corner of a field will often do. Common Foxtail is quite a tall robust plant, while Marsh Foxtail is smaller and slenderer in all its parts, and is creeping rather than upright (see Figure 5), so it is quite easy to distinguish between the two. Meadow Foxtail flowers from May to July and usually reaches a height of about 2.5 feet. Marsh Foxtail flowers later, June to August, and rarely exceeds a foot in height.

There is also another Timothy, the Smaller Catstail (*Phleum bertolonii*), which is, however, quite difficult to tell apart from its cousin. A very big plant will be *Phleum pratense*, but a rather small plant could be either, and the only way to be sure is to measure the tiny spikelets - see Figure 6. If there is any doubt, the two species can be lumped together under the general title '*Phleum pratense* (agg)', which makes it quite clear that no attempt is being made to distinguish between the two.

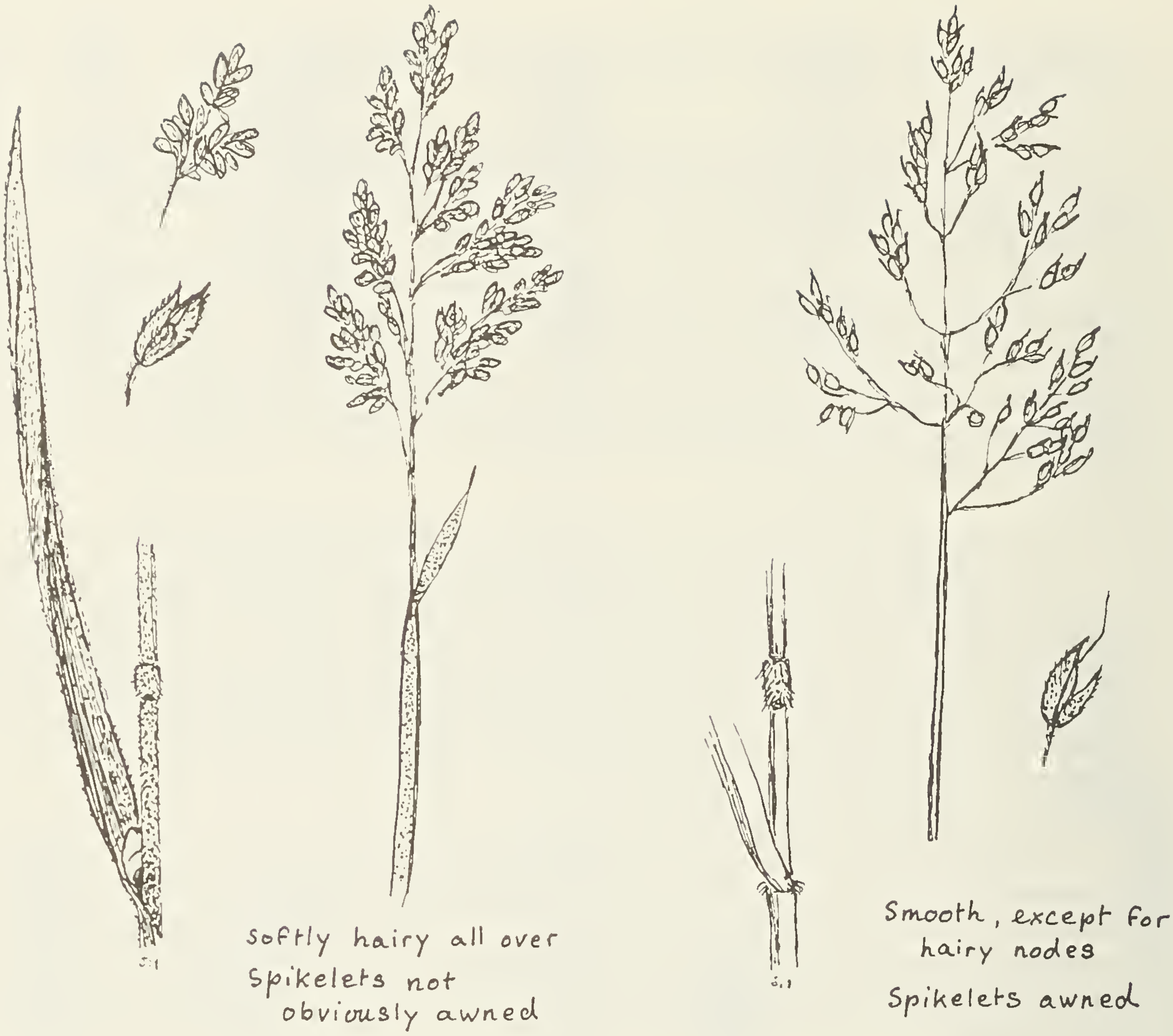
Timothy usually grows to a height of 3 feet and flowers from July to September; Smaller Catstail flowers at the same time but rarely exceeds a foot in height.

5. PERENNIAL RYE-GRASS (*Lolium perenne*), COUCH GRASS (*Elymus repens*)

Here we have another pair of grasses which are easily confused. This time however it is the detailed structure which is similar while the overall structure is different. Each plant has a flower consisting of alternate rows of rather similar spikelets, but the method of attachment is different. In Rye-grass the spikelets are attached edge-on to the stem, in Couch Grass they are attached face-on (see Figure 7). There are other differences too; Rye-grass is generally smaller than Couch and flowers earlier, though it has a long season and so overlaps the later-flowering Couch.

The spikelets of Rye-grass are sometimes awned (see Figure 8), and the awned version is known as Italian Rye-grass and regarded as a sub-species. To distinguish them properly you should refer to Perennial Rye-grass as '*Lolium perenne* ssp *perenne*' and Italian Rye-grass as '*Lolium perenne* ssp *multiflorum*'. Both Rye-grasses grow to about 2 feet and flower from late May to August.

Couch Grass may also have awns on occasion, and still be just Couch Grass. Unless, that is, it is in a wood or shady place, has a more slender and graceful flower-head than you would normally expect with Couch and most important, the awns are **much** longer than the spikelet (see Figure 9), in which case the plant is Bearded Couch (*Elymus caninus*). (If you have any doubt about the



Softly hairy all over
Spikelets not obviously awned

Smooth, except for hairy nodes
Spikelets awned

FIGURE 10: Yorkshire Fog and Creeping Soft-grass.

identification it's probably **not** Bearded Couch, by the way.) Couch grasses normally reach a height of around 3 feet, but can be quite a bit taller if competing with rank vegetation or a hedge. They flower from July to September.

6. YORKSHIRE FOG (*Holcus lanatus*), CREEPING SOFT-GRASS (*Holcus mollis*)

The distinctive point about Yorkshire Fog is that it's furry (or as the books say, softly hairy all over) - and you don't need a lens to see it, particularly on the leaf sheaths just below the flower spike. Its hairiness gives the whole plant a greyish colour, and the flowers may sometimes have a pink or purplish tinge. It flowers from June to August, and is very common in grassland and waste places and can stand a certain amount of shade. It reaches a height of about 2 feet, and its general shape is illustrated in Figure 10.

Creeping Soft-grass is a close relative of Yorkshire Fog and very similar in general structure. However it is not nearly so hairy, except at the nodes - which has resulted in the nickname 'Hairy Knees' (see Figure 10). Generally, I think, the flower is rather 'looser' than Yorkshire Fog, but the awned spikelet is a better distinction. It flowers later than Yorkshire Fog (July to August plus), and can stand a good deal of shade, so it is common in woodland as well as waste places; otherwise the habits of the two plants are rather similar.

The Holcuses complete this rather idiosyncratic list of common but fairly distinctive grasses. I think they are all recognisable with a little practice, and it is useful to be able to dismiss them when moving on to more difficult species. The nine main grasses mentioned should be present in most 1-km squares in the lowlands - if not quite in every roadside verge!

Reference book: *Grasses*, C.E. Hubbard, Penguin (3rd edit.)

Index of grasses mentioned in the article:

Reed	Canary Grass	*Phalaris arundinacea*	1
COMMON	CATSTAIL	*Phleum pratense*	4
Smaller	Catstail	*Phleum bertolonii*	4
	COCKSFOOT	*Dactylis glomerata*	1
COMMON	COUCH GRASS	*Elymus repens*	5
Bearded	Couch Grass	*Elymus caninum*	5
CRESTED	DOGSTAIL	*Cynosurus cristatus*	2
Marsh	Foxtail	*Alopecurus geniculatus*	4
MEADOW	FOXTAIL	*Alopecurus pratensis*	4
FALSE	OAT-GRASS	*Arrhenatherum elatius*	3
Wild	Oat	*Avena fatua*	3
Yellow	Oat-grass	*Trisetum flavescens*	3
Italian	Rye-grass	*Lolium perenne* ssp *multiflorum*	5
PERENNIAL	RYE-GRASS	*Lolium perenne* ssp *perenne*	5
CREEPING	SOFT-GRASS	*Holcus mollis*	6
	TIMOTHY GRASS	*Phleum pratense*	4
	YORKSHIRE FOG	*Holcus lanatus*	6

J. Muscott

BIRDS OF PARADISE

The air is cooling noticeably on the undulating plateau and the overcast sky indicates that dusk will fall soon after six. I am standing on a track through the montane forest at 9500 feet in the Tari Gap deep in the Southern Highlands of Papua New Guinea. A rush of air above my head attracts my attention to a pair of tail streamers over two feet in length, trailing behind a dark bird the size of a thrush. To my delight the male Ribbon-tailed Astrapia (*Astrapia meyerii*) lands in a moss-laden umbrella tree 30 feet away and starts to eat the berries. The white tail streamers contrast vividly with a splendid, iridescent, satin blue gorget and forehead, flashing in a farewell shaft of sunlight. Meyer seems to have overlooked the obvious link with St Andrew when he found this bird in 1939, the last of the Birds of Paradise to be discovered by science.

Europe first heard tales of Birds of Paradise in the early sixteenth century with the return of the Victoria of Magellan's fleet, which circumnavigated the globe. With it came two yellow skins of Lesser Birds of Paradise (*Paradisaea minor*), more aptly named by Bill Oddy 'the Definitely Most Smashing One Yet Bird of Paradise'. The legs, feet and wings had been removed, lending credence to the report that 'they have no wings but have instead long feathers of diverse colours like long plumes. They never fly except when there is wind and come from the earthly paradise, and were called birds of God.' Even if it did not take long for naturalists to prove that live birds possess perfectly normal legs, wings and feet, the name Birds of Paradise remained because of the spray of dazzling red, yellow or blue tail plumes sported by the Paradisaea, one of the seven subgenera into which the family is split.

This subgenus accounts for seven species: the cnemophilines including the flame orange and black Sickle-crested Bird of Paradise (*Cnemophilus macgregorii*) account for three; there are eight in the crow-like group of the Manucodiae, Paradigallae and MacGregor's Bird of Paradise (*Macgregoria pulchra*); there are four Sicklebills and 17 so-called typical Birds of Paradise. Of the 43 species in all, 32 are found in Papua New Guinea, four in Queensland and the remainder in Irian Jaya and smaller Indonesian islands. They range in size from the bullfinch-sized King Bird of Paradise (*Cicinnurus regius*) to the jackdaw-sized Black Sicklebill (*Epimachus fastuosus*) which can measure nearly four feet from the tip of its long decurved beak, for prising insects from tree trunks, to the end of its elongated central tail feathers.

Most Birds of Paradise are frugivorous; locating fruiting trees is the next best way to find the birds to waiting at traditional display trees. None are universally distributed, since individual species have evolved to fill niches at altitudes from sea level to 12,000 feet. Most are found in the Highlands, sometimes in isolated mountain ranges, a few in the flat lowlands and several on small islands.

Communal displays at favoured trees in the forest are a well-known characteristic of Birds of Paradise, particularly the Paradisaea. For a couple of hours every morning, up to ten males will challenge one another for the prime spot by crowing loudly and throwing their feathers behind their backs and sparring with one another, rather like Blackcock at a lek, except that the displays are arboreal. The winner takes all, a practice emulated by Highland tribes, where even for educated men, five wives is a not uncommon harem.

Although many species are found in extensive parts of the Highlands, numbers in accessible areas are few because their plumes are much sought after by the local tribesmen for inclusion in the head-dresses worn at 'sing-sings' on important occasions such as pig exchanges or payment of bride price. In the Central Highlands, long black tail feathers from the Princess Stephanie's Astrapia (*Astrapia stephaniae*), pale blue head feathers from the King of Saxony's Bird of Paradise (*Pteridophora alberti*) and the dark blue breast shield of the Superb Bird of Paradise (*Lophorina superba*) are most frequently encountered in head-dresses. The vivid blue tail-feathers of the Blue Bird of Paradise (*Paradisaea rudolphi*), claimed by those lucky enough to have seen it as the most beautiful of all, are now rarely used because the bird has been hunted out from some areas and much of its preferred habitat of mid-mountain oakwoods has been felled for growing sweet potato and coffee by the rapidly growing population.

Unfortunately, like other governments in developing countries, the prevailing attitude of the authorities is at best one of indifference and at worst one of hostility to conservation because of its assumed incompatibility with economic development. Nevertheless, the Raggiana Bird of Paradise (*Paradisaea raggiana*) has been adopted as the national emblem and is proudly painted on the Air Niugini fleet, which is one step in the right direction of heightening an awareness and appreciation of Papua New Guinea's rich heritage. The popularity of their plumes for ceremonial dress is also testament to the significance attached to Birds of Paradise. With planned resource use and a greater role of conservation in education, the flowing white tail streamers of the Ribbon-tailed Astrapia will continue to be seen dancing over the montane forest.

Andrew Lyburn

MUIRAVONSIDE COUNTRY PARK (LINLITHGOW)
COUNTRY FAIR, 7 JUNE 1987

In May, a letter from the Countryside Ranger, Mr C. Fox invited the Society to participate in their Country Fair. Preparation was carried out by Mrs M. Robertson, Mrs E. Gillespie and myself. We ransacked the Club Rooms and a dummy display was set up. Many items had survived from the 'Countryside in Edinburgh' exhibition at Meadowbank; others came from private collections. For extra staffing we called upon Mr and Mrs D. Manson, and we were glad of their help.

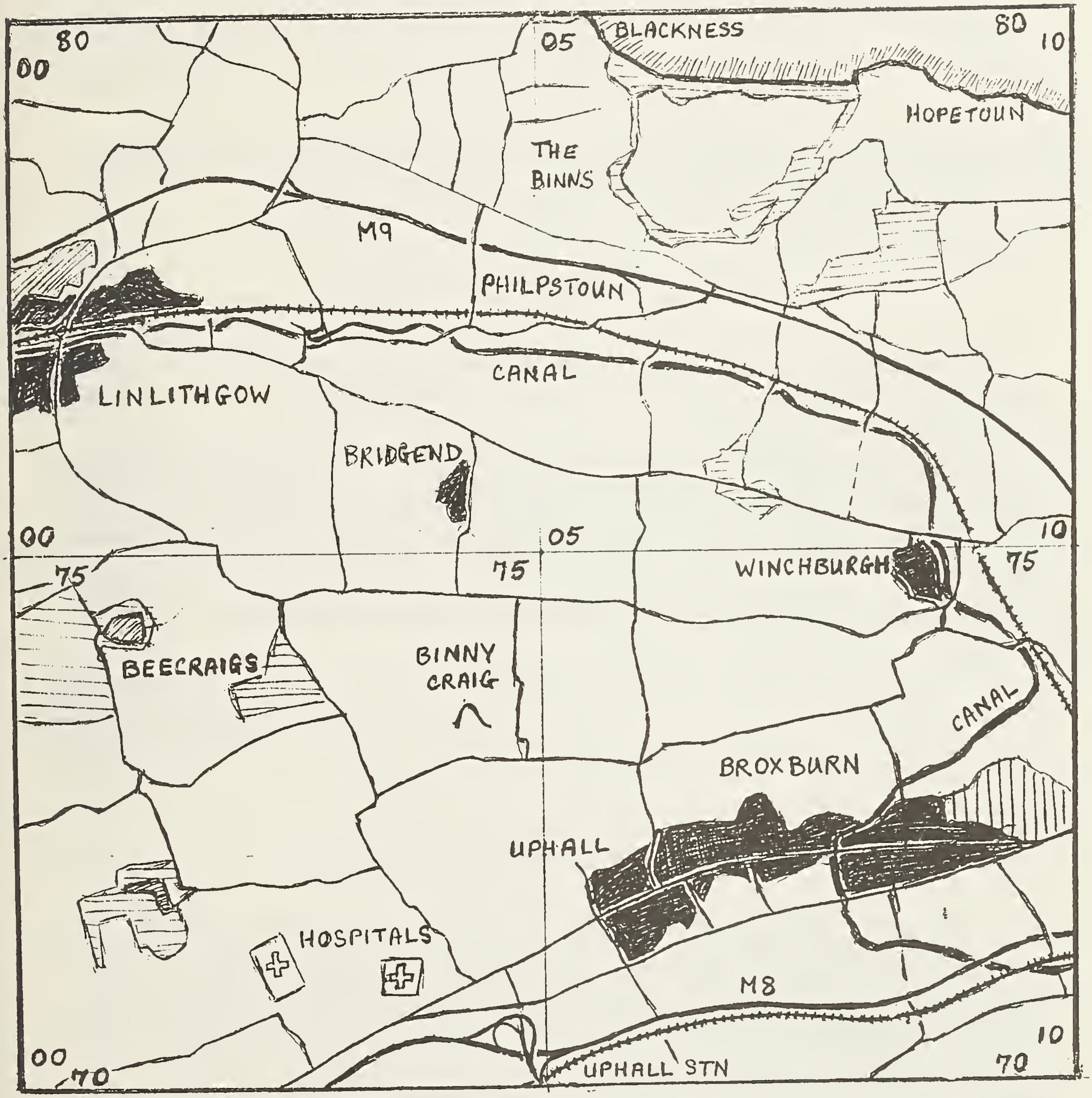
On site were three large marquees in the field by the farm buildings, for refreshments, crafts and wildlife. Setting up was straightforward. We soon had a large dish of pond life specimens and this proved very popular. By having four on duty the load was shared and we were able to take time off to do some visiting. Heavy rain hindered but had the effect of driving people in from the outdoor activities to look, touch ('Please Touch') and to ask questions.

It would be a good idea for the Society to have, in store, the makings of an exhibition so that one could be mounted at short notice. Perhaps members have items they could donate.

C.P. Rawcliffe

BSBI RECORDING SCHEME - HELP!

Have you been botanising in this area in 1987? Will you be in 1988?



The Botanical Society of the British Isles is at present conducting a botanical survey over the whole country. Sample areas have been chosen and vice-county recorders are being asked to survey them during 1987 and 1988. This will give us an up-to-date picture of the British flora, and, if the exercise is repeated in 10 or 20 years' time, we should have some hard facts about the changes which are taking place.

The 10 x 10 km square above is 'my' sample square in West Lothian (I recently became West Lothian recorder), and I am interested in any records made in 1987 - or in 1988 - and this includes ALL plants, common as well as rare.

So if you have any records for 1987 could you send me a plant list (English or Latin) together with location or route taken? And if anyone plans visits for 1988 (for the BSE recording scheme, for example) could they contact me in advance as this will help me to co-ordinate visits - and we could perhaps join forces on occasion.

Jackie Muscott
69 Warrender Park Road
Edinburgh EH9 1ES
Tel: 031-229-1037

p.s.: I am of course interested in records - particularly of uncommon plants - for the whole of West Lothian. Also I am hoping to publish a Plant List for the area in the spring. East Lothian and Midlothian Plant Lists are already at an advanced stage. Cost £2-£3 each approximately.

APPEAL FOR HELP WITH SPIDERS

The British Arachnological Society in co-operation with the Biological Records Centre has recently set up a Spider Recording Scheme along similar lines to those schemes run by practically all other branches of natural history.

In Scotland, arachnologists themselves are a rare species, and collectors amongst them even rarer. However, there may be amongst members of this Society those who would like to participate in the scheme by becoming collectors. Some may have interests in other branches of entomology, practice pitfall trapping as a means of collecting, and doubtless catch spiders as a byproduct of their efforts.

I would be very pleased to hear from anyone who might have an interest in helping with this project.

J.A. Stewart
109 Greenbank Crescent
Edinburgh EH10 5TA
Tel: 031-447-4210

BMG - BISG ANNUAL MEETING

Between 23 and 26 April 1987 I was able to attend the annual meeting of the British Myriapod Group and the British Isopod Study Group. In this I was assisted by a grant from the Sime Fund. The meeting was held at Langford House, part of the University of Bristol School of Veterinary Science. There were 30 people present, mostly from England and Wales, two from Finland, two from France and one from Scotland. On our first afternoon we went to Burrington Gorge in the Mendips; here I had my first insight into the skill of the expert collector - it left me speechless.

Later we went on two more organised outings, one into South Wiltshire, VC8 on Friday, and the following day we went to Brent Knoll and Brean Down in North Somerset, VC6. The weather was most favourable and the collecting was rich.

In the evenings there were slide shows and short lectures, and opportunities for laboratory work. One lecture dealt with a Centipede, *Henia vesuviana* that can exude a glue to gum up and so defeat a predator. From the two French members we had an illustrated lecture entitled, "Conserved and egested fractions in an isopod living in a mixed forest ecosystem". Translated into plain English it was about a Woodlouse, *Philoscia muscorum* eating Hornbeam and Oak leaves and then "transforming" them into soil. It turned out to be most fascinating.

The long journey south and back was well worthwhile, and I am grateful to the Society for the help that it gave to me.

C.P. Rawcliffe

ODONATA RECORDING SCHEME

Originally known as the Odonata Mapping Scheme and set up in 1968 by the Biological Records Centre at Monks Wood, the scheme's results are to be published in the Final Atlas to be produced in 1988. This atlas of dragonfly distribution is based on sight records. Each species is plotted on a blank map divided into 10 x 10 km squares. Interim, provisional atlases have shown, as would be expected, a lack of records (related to a lack of recorders) in Scotland.

The few active Scottish odonatists have been square-bashing in an endeavour to provide better coverage helped by several enthusiastic English odonatists, holidaying in Scotland, who have added their leg-power and expertise to the task. Dragonflies, in general, fly only in sunshine and the weather clerk for the past three seasons has been noticeably unco-operative. Only the most dedicated odonatists, in such circumstances, can be expected to sieve through a sphagnum bog with a plastic colander in the fond hope of finding a dragonfly nymph. Even more to be wondered at - they are sometimes successful!

Records accumulate in a variety of ways. Often, explaining one's presence and activities to people one meets, brings unexpected bonuses. A chance acquaintance, a fisherman on holiday in South Kintyre, got interested and has now provided several records from this poorly recorded area. An encounter with a shepherd in Argyll led to a new record for *Aeshna cyanea*, the Southern Aeshna, a rare species in Scotland. Another Scottish *A. cyanea* record resulted from the efforts of a dragonfly enthusiast who saw its portrait on a picture postcard and successfully traced the photographer. Amateur photographers find dragonflies a challenging subject and several good quality photographs have put new squares 'on the map'. The prize for the most unorthodox method of obtaining a record must, however, surely go to one of the RSPB bird-of-prey watchers who discovered dragonfly wings in a Merlin's nest. As classification of the Odonata is based on the arrangement of veins in the wings it was easy to identify this one as a Gold-ringed Dragonfly (*Cordulegaster boltonii*) - our largest species.

Even when interested observers do not know the species they have seen their records can be well worth following up. The classic example of this was when M. Mowat reported seeing lots of blue dragonflies at a spot in the Solway in early June 1982. The earliness of the date suggested that the record was worth checking as our common 'blue' dragonfly (the Common Aeshna) flies much later in the year. It was June 1987 before Bob and I got round to visiting the site. Margaret had given us full details of access but, as we trudged through a coniferous wood, Bob's spirits sank - it seemed such an unlikely place. However shortly we saw a loch through the trees and when we approached we were both struck with its potential. It had the appearance of an unspoiled natural water with a thin screen of Phragmites, White Water-lilies and abundant underwater vegetation. Most importantly there was floating detritus of bits of stems, possibly of the True Bulrush (*Scirpus lacustris*) which was growing further along the loch. At the only other two sites where we have seen such floating detritus among sheltering vegetation we have also seen *Brachytron pratense*, the Hairy Dragonfly, a species which flies early in the season. The previous records included the first for Scotland and both were in Argyll. Now, in Kirkcudbright, could *Brachytron* be present? Excitement was high as we pushed through the bushes to get to the water's edge. It fell to Bob to be the first to spot a male flying low among the reeds, to catch it (to examine then release it) and then, to our great delight to see a female egg-laying in the detritus at his feet. There may be other lochs in Scotland with floating stem detritus and, if so, maybe *B. pratense* breeds there too. If you happen to know of any such site do please let us know and we'll check it out.

There are four 'Emeralds' on the British list; one, a riverine species, now considered to be extinct in Britain since its only known site became unsuitable. The second, *Somatochlora arctica* (the Northern Emerald), is restricted to the north and west of Scotland and a tiny area in south-west Ireland. It frequents peaty bogs with adjacent tree cover. The other two are very local in England and even more so in Scotland. *Somatochlora metallica* (the Brilliant Emerald) is known from two restricted localities in North Scotland and *Cordulia aenea* (the Downy Emerald) has been recorded from three. The larval periods of both the Brilliant and Downy Emeralds are spent in sheltered waters, and in Scotland they only seem to have survived in natural lochans with adjacent, ancient woodlands. This combination of suitable unspoilt waters and mature woodland cover does not seem to be common and it is a vital first step in devising a conservation strategy for dragonflies that all lochs of this type should be identified.

After the publication of the final atlas, records will still be very welcome, adding to our knowledge and understanding of the habitats of these flying jewels. Records are stored in the Biological Records Centre at Monks Wood and the data will be available to the NCC as required in connection with conservation.

Elizabeth M. Smith

NOTES ON NATURAL HISTORY - 1987

General Observations

We had very warm weather at the end of April with temperatures over 60°F. Daffodils flowered and died very quickly in the heat. June was notable for persistent north-easterly winds which gave us a cold, dull and wet month. It was not until the 27th that the wind changed to the west bringing warmer air. *The Scotsman* noted that the weather in June was the worst since 1912. Part of south-eastern Scotland experienced almost twice the average rainfall for the month and half the average sunshine. By contrast, northern and western Scotland and the Hebrides enjoyed glorious weather. (M.R.)

Specific Observations

26.12.86	Musselburgh Lagoons: Merlin.	(D.A.)
8. 1.87	Queen's Park near Duddingston: Waxwing.	(D.G.)
26. 1.87	King's Buildings, Edinburgh: Waxwings.	(M.M.C.W.)
28. 1.87	Barnton, Edinburgh: Fox, remaining for several minutes within 4 feet of house and in full glare of light. It left when light switched off but may also have been disturbed.	(E.McA.S.)
7. 2.87	The Hirsel, Coldstream: One alder tree provided food for Blue, Coal, Great, Long-tailed and Marsh Tits; Tree Creeper and Great Spotted Woodpecker were within sight too.	(M.M.C.W.)
24. 2.87	Caerlaverock, Dumfries: Among the Barnacle Geese was an albino.	(C.R.)
8. 3.87	Holy Island: 44 light-bellied Brent geese were seen, making a rare stop-over on their spring migration.	(M.R.)
14. 3.87	Cleish Hills, Kinross: A Short-eared Owl displaying.	(M.M.C.W.)
29. 3.87	Inversnaid, Loch Lomond: Filmy Ferns (*Hymenophyllum tunbrigense* and *H. wilsonii*) on rocks and tree stumps.	(D.A., G.M.)
2. 4.87	Coulter, Biggar: Just below the dam at Coulter Waterhead Resservoir I saw my first Wheatear of the year.	(C.R.)
8. 4.87	Barnsness, Dunbar: Avocet.	(M.M.C.W.)
10. 4.87	Dawyck, Stobo, Peeblesshire: A Green Woodpecker first calling and then seen.	(M.M.C.W.)
10. 4.87	Yellowcraigs, Dirleton, East Lothian: Wheater, 2 Swallows.	(B.G., D.G.)
18. 4.87	Dunkeld: An Adder, on the way to the Mill Dam.	(M.M.C.W.)
18. 4.87	Tantallon Castle, North Berwick, East Lothian: First Swallow of the year.	(C.R.)

18. 4.87 Buchny Burn, Butterstone, Dunkeld: Alternate-leaved Golden Saxifrage. Hen Harriers in aerial display high up in the moors near the source of the burn. The male rose steeply before swooping towards the female calling Kek, Kek, Kek ... Performance repeated several times. Ospreys (3), Peregrine (1), and Buzzards in the area. (D.A., G.M.)

25. 4.87 Hopetoun, South Queensferry: Three summer migrants heard for the first time this year, Willow Warbler, Chiff-Chaff and Blackcap. A Woodpecker was heard drumming and 5 Sandwich Terns were seen off-shore. (M.R.)

7. 5.87 Newlands, Gifford: A male Orange-tip Butterfly (*Anthocharis cardamines*). (C.R.)

12. 5.87 Stenton, E. Lothian: Close to the Black Loch there were two Roebuck. (C.R.)

13. 5.87 Turnhouse, Edinburgh: Two Fallow Deer beneath Craigie Hill near Turnhouse. Possible escapes from Hopetoun. (D.A.)

17. 5.87 Speyside: An Osprey diving for fish at Spey mouth. A little way upriver, 24 Goosander, male and female, were seen on a shingle bed. On Speyside way, a singing Whitethroat on a hawthorn bush. (M.R.)

17. 5.87 Loch Garten: A female Crested Tit struggling with a spider's web which was finally carried off as nesting material. (M.R.)

18. 5.87 Lagganalachie, Strathbraan, Dunkeld: Yellow Archangel (*Galeobdolen luteum*). Hen Harrier (male) and a pair of Peregrines nesting in crags in the hills to the south of the river. (D.A., G.M.)

19. 5.87 Culbin Forest, Nairn: Intermediate Wintergreen in flower. (M.R.)

23. 5.87 Craigie Barns, Dunkeld: Under a stone, a Slow-worm (*Anguis fragilis*). (C.R.)

23. 5.87 Dunkeld: Green Hairstreak butterfly (*Callophrys rubi*). (E.G., D.M., E.McA.S.)

7. 6.87 Muiravonside Country Park, Linlithgow: Found by the Ranger, a female Palmate Newt (*Molge palmata*). (C.R.)

17. 6.87 Barnton, Edinburgh: Orange-tip butterfly (*Anthocharis cardamines*). (E.McA.S.)

17. 6.87 Hopetoun, South Queensferry: Observing the red deer herd at Hopetoun, the Rangers were interested to see one hind suckling two calves. We ascertained from the keeper that no twins had been born, so this must be a case of 'fostering'. Mr David Stephen has written about roe deer fostering an orphan. It would be interesting to know if anyone has records of red or fallow deer adopting a suckler. This particular calf was not an orphan. Perhaps the mother had a poor milk supply and 'aunty' was helping out. (I.McL., J.C., C.P.R., M.R.)

21. 6.87 West Pentlands: Merlins (nesting) and Peregrine. (D.A.)

28. 6.87 Gladhouse Reservoir, Temple, Midlothian: A Corn Bunting. (C.R.)

29. 6.87 Dunglass beach, Cockburnspath: Hen Peregrine seen flying along cliffs. (M.W.)

1. 7.87 Silverknowes foreshore: One Grey Seal. (C.R.)

2. 7.87 Cockburnspath: Stoat appeared on kitchen-windowsill, vanished round corner, and re-appeared within seconds carrying, with difficulty, a young rabbit, with which it ran out of sight into front garden. (M.W.)

12. 7.87 Creag Mhor, Glen Lochay, Killin: Alpine Saxifrage (*Saxafraga nivalis*), Mountain Avens (*Dryas octopetala*) and Alpine Woodsia (*Woodsia alpina*). Large badger sett on lower slopes of the mountain. (D.A., G.M.)

12. 7.87 Hermitage of Braid, Edinburgh: Common Blue butterfly (*Polyommatus icarus*) and young Wheatear. (E.McA.S.)

21. 7.87 Barnton, Edinburgh: Large Emerald moth (*Geometra papilionaria*). (E.McA.S.)

22. 7.87 Craigie Wood, Dalmeny: Light Emerald moth (*Campaea margarita*). (E.G., M.R., E.McA.S.)

25. 7.87 Hopetoun House North Deer Park: Flying in broad daylight, a Chimney Sweeper moth (*Odezia atrata*). (C.R.)

26. 7.87 Moorfoots: Female Hen Harrier on slope of Blackhope Scar. Down in the Leithen Water Valley, Oak Fern and Beech Fern. (D.A., G.M.)

28. 7.87 40 Hanover Street, Edinburgh: Shaggy Soldier (*Galinsoga ciliata*) at base of railings. 'Alien, common in London area', Keble Martin. Are we being invaded? (G.M.)

29. 7.87 Barnton, Edinburgh: Swallow-tailed moth (*Ourapteryx sambucaria*). (E.McA.S.)

1. 8.87 Grange, Edinburgh: A young Willow Warbler in my garden. (M.M.C.W.)

2. 8.87 Aberfeldy: Large numbers of Scotch Argus butterflies. (W.G.)

2. 8.87 Stewartfield, Dalguise, Dunkeld: Interrupted Clubmoss (*Lycopodium annotinum*) on 1000 ft contour. Confirmed by Dr C. Page who states that this plant rarely descends below 1500 ft. Black-throated Diver on nearby Loch Skiach. Water Lobelia (*Lobelia dortmanna*) in the loch and Greater Wintergreen (*Pyrola media*) in the heather. (D.A., G.M.)

6. 8.87 Royal Botanic Garden, Edinburgh: 5 Siskin. (C.R.)

8. 8.87- 15. 8.87 Kindrogan, Blairgowrie: Roe Deer, Red Squirrel, Brown Hare, Sparrowhawk, Buzzards and Green Woodpecker. (D.A.)

14. 8.87 Port Dundas, Glasgow: Royal Fern (*Osmunda regalis*). 12 plants by canal basin. Round-leaved Cranesbill (*Geranium rotundifolium*) on the towing path. (D.H.)

23. 8.87 Loch Ordie, Dunkeld: Eight Ospreys, many Fallow Deer and 15 different ferns. (D.A., G.M.)

26. 8.87 Cramond Brig, Edinburgh: Kingfisher. (D.A.)

30. 8.87 Clatteringshaws Loch, New Galloway: Scotch Argus butterflies. (W.G.)

30. 8.87 Middleton, Midlothian: Barn Owl. (D.A., G.M.)

1. 9.87 Dunglass Estate, Cockburnspath: A fine cluster of *Agaricus angustus* - 'The Prince' - found in grass below Scots pine, the largest about 18 cm across. (The smallest, of 12 cm, was taken home for confirmation of identity and subsequently eaten for supper!). A second flush of this fungus, more numerous but of less perfect specimens, appeared in the same spot in mid-October. (M.W.)

14. 9.87 Hopetoun, South Queensferry: Four Spotted Flycatchers seen in Hopetoun House grounds, on a dead elm. (M.R.)

17. 9.87 Forth and Clyde Canal, Falkirk: Arrowhead (*Sagittaria sagittifolia*), Gipsywort (*Lycopus europaeus*) and Tufted Loosestrife (*Lysimachia thyrsiflora*). (A.F., G.M.)

19. 9.87 Harperrig Reservoir, Midlothian: Greylag geese in skeins while Swallows and House Martins were catching insects in mid-flight and a Wheatear was perched on a post nearby. (M.M.C.W.)

20. 9.87 Rosslyn Castle, Midlothian: Dutch Rush (*Equisetum hyemale*), an interesting Horsetail once collected and sold in bundles for scouring cooking pots and now very rare in Midlothian. (D.A., G.M.)

4.10.87 River Braan, Dunkeld (NN 993 407): Shady Horsetail (*Equisetum pratense*), uncommon. (D.A., G.M.)

9.10.87 Musselburgh Lagoons: Snow Bunting. (D.G.)

11.10.87 Grandtully Hill, Aberfeldy: Immature Golden Eagle. Nine Carrion Crows busy tearing wool from a newly dead sheep. A pair of Ravens watched from a nearby tree. Mountain tops covered with the first winter snow. (D.A., G.M.)

12.10.87 Priestfield, Edinburgh: Green Woodpecker. (B.G.)

15.10.87 Upper Glen Tilt, Perthshire: A lone House-martin flying steadily northwards. With snow already on the high tops, its survival seems doubtful. (M.W.)

18.10.87 Murray's Monument, Galloway: A stag roaring in rut. (M.M.C.W.)

30.11.87 Shambellie, Dumfries: Complete ring of the Goblet fungus *(Cantherellula cyathiformis)* in long-established woodland. (E.McA.S.)

Willow Warblers in suburbia

On one of those lovely warm days at the end of April, as I worked in the garden, I became aware of the softly falling notes of a Willow Warbler among the general bird song. The bird or birds stayed around for about a week.

It took me some time to locate the calls I heard between 4 and 6 August but eventually I saw the little birds, three Willow Warblers, possibly a family party. On 10 September after a day of wind and heavy rain on the 9th, I observed one Willow Warbler among a party of Blue Tits. It made a quick sortie from the Hawthorn bush to the bird table. No doubt it was starving.

It would be interesting to know if other members have noticed migrant birds making use of the shelter of trees and shrubs in suburban gardens.

M. Robertson

Birding at home

Many people with an interest in bird-watching keep a list of species seen in, around, or from their gardens. I am one of them, and during thirty years' residence at Greenbank my garden list has reached sixty species, not a record-breaking total I am sure. Nevertheless it contains some interesting records, and looking back it shows the influence of the gradual spread of housing into what in the late fifties was farm and parkland to the south and east.

To call it a garden list is perhaps stretching the imagination a bit because it includes everything that could be definitely identified no matter how distant. But the majority of species were seen within 200 metres of my back door in, or over, either the garden or the Braidburn Valley Park which lies over the garden fence with the burn itself no more than 50 metres from my boundary.

The burn attracts its own species with Mallard regularly flighting along it, and with the occasional excitement of a passing Dipper or Grey Wagtail. But what I have enjoyed much more over the last few years has been the almost daily early morning presence, during certain periods in winter, of a stately Heron standing its ground near the burn until the pressure of dog-walkers forced a slow and dignified take-off towards the Pentland Hills.

On two rare occasions a Fulmar has been seen flying over, in the same south-westerly direction towards the Pentlands, and was presumed to be heading for Torphin Quarry where breeding had been known.

An even rarer sighting was that of a beautiful male Merlin one fine autumn day as he swooped into an apple tree, perched for only a few seconds, and was off again along the course of the Braid Burn. He was travelling from the hills towards the coast where, no doubt, his sustenance for the winter would be more easily found.

The suburban sprawl mentioned earlier has caused some notable losses. Gone are the days of perching flocks of Yellowhammers, Reed Buntings, and Tree Sparrows gleaming in the winter sunshine. The calling of Partridges is not likely to be heard again. But the heartbeat will still quicken at the sight of a Wheatear in the park, or the sound of a Chiffchaff in the trees, or the foraging of a party of Long-tailed Tits in winter.

What will number 61 be? A Great Black-backed Gull? Why is this one missing when so many of the other gulls hang about so often. Or will it be a Waxwing? After thirty years the chances might be about even.

J.A. Stewart

Strangers unawares

I have made a habit, while weeding in our cottage garden, of leaving to grow on every seedling which I cannot recognise as one of the common garden weeds. Last year this resulted in the rearing of a good plant of Nodding Bur Marigold (*Bidens cernua*). This year I cultivated an attractive silvery-green ground-cover plant before discovering it to be the Pirri-Pirri Bur (*Acaena anserinifolia*), and have also enjoyed three months of continuous flowering from a single plant of the Common Melilot (*Melilotus officinalis*) which appeared from a crevice in a loose stone wall and reached a height of over a metre. It was still flowering in November. I noticed that the pollinator of the Melilot was the Buff-tailed Humble Bee (*Bombus terrestris*); throughout the summer the plant was seldom without one or more of these bees in attendance.

I am not aware of any of these plants occurring in the immediate locality; are the seeds brought in by birds, or is it possible that they have been introduced in the wild bird food which I buy for the bird-tables?

M. Watson

Garden survey

It is now October and there are some fine specimens of Feverfew (*Tanacetum parthenium*) in the vegetable plot. Apart from the common weeds of cultivation, I have found one or two odd 'weeds' in the garden from time to time, like Hemp Nettle, Black Bindweed, Black Nightshade, Caper Spurge, a yellow Oxalis, a Bupleurum or Hare's-ear once and Remote Sedge this year. Various odd unidentified plants appear from bird seed and one year I had a seedling Loquat which must have germinated from some compost I threw out. There are also four species of fern and some lichens, as well as moss in the lawn.

In other gardens I have seen some lovely 'weeds', like carpets of pale blue Speedwell and the handsome Orange Hawkweed known as Fox and Cubs. I know one member who has a Helleborine in her garden!

It occurred to me we could well do a garden weed survey and maybe find some surprises.

M. Robertson

Butterflies and moths in Lothian, 1987

Spring began promisingly with three sightings new to me of the male Orange Tip butterfly, two in the city centre at Stockbridge and Warriston Road (7 May) and one at Cammo Park (4 May), all near water with tree shelter. Later I recorded one at Heriot (30 May) and another at Almondell (12 June).

But the Small Tortoiseshell has not yet, it seems, recovered from its near elimination last season; the only Edinburgh specimen I saw was flying below Salisbury Crags on 17 April.

June was wet and chilly but the Small Copper and Common Blue butterflies were just holding their own on the Crags in July (4-13) while I found a site for the latter new to me at Roseburn, Old Station (7 July). My count for the Meadow Brown (particularly the male) was below average but the Red Admiral had a goodish year (Gullane, 8 May; Heriot, 25 July; Wallyford, 22 August) while a friend reported one Painted Lady near Haddington (16 September). I was very pleased to see a Peacock butterfly on the canal on 24 July.

The attractive Emperor (Pentlands) and the colourful Cinnabar moth larvae (Gullane Dunes) were more plentiful this year - and the wasps.

W.B. Grubb

Short note on Water of Leith

On 9 and 30 October 1987 three members of the ENHS assisted children of Primary 7 of Roseburn School with a Freshwater Biology exercise in the Water of Leith. This was part of a Watch scheme. In the water at Murrayfield the children caught many specimens of the Miller's Thumb or Bullhead (*Cottus gobio*).

C.P. Rawcliffe

Strathpeffer study week

On a week in the Highlands I saw:
    335 Whooper Swans
    100 Chaffinches
    50 Redwings
    50 Ringed Plovers
    40 Common Seals
and a Great Northern Diver.
    200 Whooper Swans
    26 Black-throated Divers
    14 Herons in a Heronry
    10 Turnstones
    6 Mute Swans
and a Lone Brent Goose.
    45 Whooper Swans
    Several female Scaup
    Many Buzzards
    2 Ravens
    2 Red-throated Divers
and a juvenile Golden Eagle.
    1 Goldeneye
    1 Fieldfare
    1 Shag
    1 Peregrine stooping at a Kestrel
    Many Red Deer
and a Partridge .....

B. Gill

Forth island bird counts 1987

	Craigleith	Lamb	Fidra	Inchkeith	Inchmickery	Carr Craig
Fulmar	111	4	91	500	12	
Cormorant	109	83				137
Shag	465	246	64	10+	24	28
Eider		3	163		118	
Greater Black-back Gull	3					
Lesser Black-back Gull	930	10	140	1750	60	
Herring Gull	2280	220	410	4100	50	30
Kittiwake	X	199	726	483		
Common Tern					212	
Sandwich Tern					656	
Roseate Tern					20	
Razorbill	52	34 bds	38 bds	32		
Guillemot	X	860+	79	49		
Puffin	1165	X	X	860		

Guillemot and Puffin counts are of birds. All others are of sites or pairs unless indicated. X is present but not counted. I am grateful to the NCC for kindly allowing the publication of the Herring and Lesser Black-back Gull figures and the Lamb counts, and to the RSPB for their Inchmickery and Fidra counts.

It was the best of years, it was the worst of years ... ! The Seabird Register, listing the number of breeding pairs of all seabird species in every colony in Britain, was to be completed in 1987. The NCC in their new boat, the RSPB, the Edinburgh Ringing Group and our Island Count trips were all lined up for an assault on the unsuspecting Forth Islands. The first results were highly successful reporting unsuspected numbers of Fulmar and Eider in the Upper Forth while Carr Craig (near Inchcolm), unvisited for several years, had an astounding group of 137 Cormorant nests. Astounding, indeed devastating, as the sum total of Cormorants breeding on up to four Forth Islands has not previously surpassed 280 nests, averaging around 220-250 during the last 20 years. Now we had our 'average' total of 212 nests on the East Lothian islands (there were 20 on Eyebroughty) plus this new colony which had probably been increasing surreptitiously since the Cow and Calves group off Inchmickery had deserted in 1984. What has happened to the theory that there is a ceiling beyond which Cormorant breeding numbers in Forth will not rise? Is this now disproved or will this new group find its own ceiling? Again 'next year' may throw more light on the problem. As the tabloids say, 'Watch this space' in 1988!

The NCC did a marathon job counting the 'big' gulls on most of the islands especially the 1770 pairs on Inchcolm, 3210 pairs on Craigleith and a staggering 5850 pairs on Inchkeith. The totals for the Forth were over 15,000 pairs of which 10,860 were adjudged to be Herring Gulls, with over 4000 pairs of Lesser Black-back Gulls. The method of counting is time-consuming but fairly accurate, 6-8 counters cover the island a section at a time marking all nests with paint as they are counted. Then several people cross the island at right angles to the original traverse and a percentage of unmarked to marked is taken thus allowing an adjustment to the original count. Then sample counts are taken of mixed Herring/Lesser Black-back Gulls and the total subdivided into the two species. Only if these sample counts are unrepresentative would there be any meaningful error.

With our own counts our luck ran out. We had a reasonable day on Craigleith at the second attempt but could not cover the East cliff from the sea. Our trip to Inchkeith was on a magnificently appointed and highly powered motor-yacht, then we did our count of the island in a thunderstorm with heavy drizzle punctuated by long spells of torrential rain! Lamb and Fidra were abandoned due to rough weather. We never did get to the former after three attempts and are grateful to the NCC for their counts. We did eventually get to Fidra with the RSPB and obediently counted the Castle Island - albeit with a few longing glances at the main seabird cliff.

Perhaps because of the appalling weather and the different counters it is difficult to find a pattern in this year's results. The Fulmar counts on Inchgarvie and Inchcolm were remarkably high but the regularly counted colonies all slumped by 20% or more. The number of Shag nests increased by 87 from what was already a peak figure but there were 55 fewer nests on neighbouring Lamb. Kittiwakes alone are consistently higher - 114 more nests on Inchkeith, 194 more on Fidra and 32 more on Lamb - an astonishing increase of over 30%. Guillemot numbers were reported to be down in the St Abb's area and some of the reported counts in Forth were low, although the few spots we counted ourselves did not confirm this. Maybe, with a long spell of calm and sunny weather in summer 1988, all will be explained - maybe!

R.W.J. Smith

EXCURSIONS 1987

Key for excursions:

B - botany
F - fungi
I - insects
Fe - ferns
G - general
Ge - geology
T - trees
Li - lichens
ML - mosses and liverworts
O - ornithology
S - seashore

Day excursions and study tours:

1986			**Leader**
26 Dec	Gullane	S	
1987			
17 Jan	Dalmeny foreshore	G	Mrs J. Lyburn
14 Feb	Hopetoun House	T	Mr C. Rawcliffe
14 Mar	Muiravonside Country Park	G	Mr R. Fox (Ranger)
2 May	Penicuik Estate	G	Mr G. McDougall
9 May	Mabie Wood and Caerlaverock, Dumfries	GO	The Refuge Manager
16 May	Abbey St Bathans	BO	Mrs M. Watson
23 May	Craigie Barns, Dunkeld	B	Mr D. Adamson
30 May	Bass Rock with SOC	O	
31 May	Lamb and Fidra with SOC	O	
6 Jun	Craigleith Island with SOC	O	
6 Jun	Newtown St Boswells	B	Mrs V. McFarland
12-19 Jun	Drapers' Field Centre, Betws-y-Coed, North Wales		
20 Jun	North Queensferry	B	Mr J. Carlyle
27 Jun	Beecraigs Country Park with Dundee Naturalists Society	G	Miss C. Dudgeon (Ranger)
4 Jul	Nethan Valley, Lanarkshire	BG	Mr I. McCallum and Mr D. Hunter
11 Jul	Ballinluig Shingle Beds	B	Miss J. Muscott
18 Jul	Kincraig Coastal Cliffs, Elie	B	Mr M. Chalmers

25 Jul	Inversnaid RSPB Reserve, Aberfoyle	G	Mr M. Trubridge (Warden)
1 Aug	Butterfly Farm and Goreglen	IG	Mr G. Spiers (Curator) and Mrs M. Robertson
8 Aug	Dumyat, Bridge of Allan	B	Mr W. Brackenridge
15 Aug	Lomond Hills	G	Miss A. Irvine (Ranger)
22 Aug	Birks of Aberfeldy	Fe	Mr M. Scott
29 Aug	Balcarres Estate, Fife	G	Mr D. Manson
5 Sep	Hermitage of Braid, Edinburgh	F	Dr P. Mason and Mr A. Bennell
12 Sep	Tyninghame	S	Mr D. Jones
19 Sep	Moorfoot Hills	G	Mrs J. Lyburn
26 Sep	Gosford Bay	Ge	Mr B. Baird
11 Oct	Menstrie Glen, Alva	FLi	Mr A. Bennell and Dr B. Coppins
17-24 Oct	Strathpeffer Study Week		Mr A.G. Mitchell
21 Nov	Musselburgh and Aberlady	O	Mr C. Pountain

Evening excursions:

6 May	Musselburgh Lagoons	O	Mr B. Clunie
13 May	Craigie Wood, Dalmeny	G	Mrs M. Robertson
20 May	Craiglockhart Dell and Union Canal	G	Miss D. Mack
27 May	Cramond Island	G	Mrs M. Robertson
3 Jun	Holyrood Park	G	Mr C. Rawcliffe
10 Jun	Canonmills	G	Mr G. McDougall
24 Jun	Craigleith-Roseburn Railway Line	G	Mrs J. Lyburn
1 Jul	Silverknowes Foreshore	G	Mrs M. Robertson
8 Jul	Kirkliston	B	Mr J. Carlyle
15 Jul	River Esk, Musselburgh	G	Miss D. Mack
22 Jul	Almondell Country Park - Moth Trapping & Barbecue	I	Miss M. Konik (Ranger)

Evening study sessions:

1986	3 Nov	Fungi (Mrs E. Farquharson)
	1 Dec	Mosses (Mr J. Carlyle)
1987	26 Jan	Conifers (Mrs V. McFarland)
	25 May	How to use a flora (Mrs V. McFarland)
1987	17 Aug	Know your ferns (Mr M. Scott)
	14 Sep	A closer look at seashore life (Mr D. Jones)
	21 Sep	Looking at fossils (Mr B. Baird)

These study sessions took place in the Society's room at Donaldson's School for the Deaf. The latter three evening sessions were each held in conjunction with an outdoor excursion on the adjacent Saturday so that topics could be examined in more depth.

In addition to these formal sessions the room was open on most Monday evenings in June, July and August for informal use by members.

The Society now has a comprehensive natural history library based in this room along with magnifiers and microscopes for the more detailed examination of specimens. Help and guidance were available for anyone who felt unsure about the use of these facilities.

REPORTS AND EXTRACTS FROM REPORTS

Dalmeny Shore Walk - 17 January 1987

For the first outdoor excursion of 1987, 16 warmly-clad members met at the car park near Hawes Pier, South Queensferry. The Forth looked grey and there was snow on the ground.

As we left the road and took the track eastwards along the foreshore we saw a Black Guillemot and also a lone Curlew which was parading along the water's edge and probing the mud with its long curved beak. Just offshore appeared the head of a grey seal whilst two others were lying on nearby rocks. Oystercatcher, Redshank and Turnstone were also observed before we reached the estate lodge.

By coincidence - or was it perfect timing? - we arrived at this point just as food (a kind of bran-mash) was placed on a bird table. A great number of small birds congregated immediately. We stood for several minutes to watch as Robins, male and female Chaffinches, Blue, Great and Coal Tits, Dunnock, Blackbirds, and Sparrows flew down to collect a morsel.

We carried on along the track which runs almost parallel with the shoreline through deciduous woodland. Red-breasted Merganser, both male and female, were seen out to sea. A detour onto the foreshore was made to see the carcass of a small Common Porpoise.

Back on the track we saw Pheasant in a ploughed field on our right; and in the snow on either side of the path, the tracks of rabbit, hare, roe deer and badger. The one spot of colour was provided by flowers on a sprig of Gorse (*Ulex europaeus*).

The party progressed eastwards past Dalmeny House to where the stream at the Long Green crossed our path. Here we turned and retraced our steps.

J. Lyburn

Hopetoun House - 14 February 1987

The lovely morning tempted many members out to examine winter buds on the Hopetoun House Nature Trail. Permission had been kindly given by the Administrator of the Hopetoun House Preservation Trust.

In the Parkland there is a fair selection of mature trees as well as several introduced species, some of them rare. The more unusual buds examined were those of the Tulip Tree (*Liriodendron tulipifera*) with its flattened buds, and 'the living fossil', the Dawn Redwood (*Metasequoia glyptostroboides*) discovered in China in 1941 long after the species was thought to be extinct. (There are two small trees at Hopetoun.) We also looked at the Cut-leaf or Fern-leaved Beech (*Fagus heterophylla* 'Laciniata'), impossible to identify from the bud - the leaves have to be seen. Another specimen tree examined was the very rare Maple (*Acer henryii*) with its trifoliate leaves, discovered by Henry and introduced by Wilson in 1903.

We sat on the slopes of Hope's Walk to enjoy lunch and the winter sun. An added enjoyment was the spectacle of the Stirling and Linlithgow Hunt which held a meet at Hopetoun that day. We saw a fox break cover from the South Deer Park and cross to Abercorn. The hounds and hunt followed shortly afterwards and we could hear them as they went further into Wester Shore Wood. Imagine our amusement when the fox then returned, in no hurry, from the thickets around Abercorn Church to his lair. We had a very enjoyable day.

M. Robertson

Muiravonside Country Park, Linlithgow - 14 March 1987

The Ranger commented on the variety of work entailed in maintaining a country park, making it attractive to sustain interest and at the same time managing woodland, livestock, and meadows, protecting species and ensuring that all paths are safe for the public. This is particularly important at

Muiravonside where there is a steep-sided river gorge. In addition, there is the educational aspect. An attractive visitor centre with displays relevant to the park and a projection room for lectures allows the Ranger to teach visiting school parties. He also visits schools and speaks on various topics, and lectures to the public.

A countryside ranger has to be a man with many skills and a good public relations officer at all times; and be prepared to work 'a ten day week', as Mr Fox put it.

M. Robertson

Mabie Wood and Caerlaverock, Dumfries - 9 May 1987

Caerlaverock is the most northerly breeding ground of the Natterjack Toad and it was disappointing not to see them. A cold wind had been blowing all day and though the evening was sunny, the toads remained in their burrows, so we could only observe their brackish pools and learn from the Refuge Warden about their behaviour.

Nevertheless we had a very enjoyable visit to Caerlaverock and saw something of the Merse where the barnacle geese spend the winter. We explored some of the reserve, and visited the observation tower.

We had spent the afternoon at Mabie Wood, part of the Solway Forest. The arboretum has a variety of tree species. The most unusual are the Sawara Cypress (*Chamaecyparis pisifera*) from Japan and a Giant Redwood (*Sequoiadendron giganteum*) from California.

We found the Wood Stitchwort (*Stellaria nemorum*) in flower at the woodland edge and Solomon's Seal (*Polygonatum multiflorum*), the latter probably a garden escape. Willow Warbler and Chiffchaff were heard but there were few birds in the woodland.

M. Robertson

Abbey St Bathans, Berwickshire - 16 May 1987

We crossed the ford over the Whiteadder after some preliminary botanising around the trout-farm car park and noted that the Giant Hogweed (*Heracleum mantegazzianum*) had taken a hold at this point. The woodland ride towards Shannabank, with estate plantings on the river-bank below steep slopes of ancient oak-woods, was particularly beautiful at this time of year, with gean, Bird-cherry and red-berried Elder in full flower against a background of Copper Beech, specimen conifers and rhododendrons. Past the new Abbey St Bathan's footbridge, the building of which by a troop of Ghurka soldiers was nearing completion, the first few in our narrow file of walkers saw a Lizard (*Lacerta vivipara*) and a common Frog within a few feet of each other.

Emerging from the woodland at Shannabank Farm, we climbed the hillside, where we watched a Treecreeper and heard, though failed to see, Redstarts. A large field of oilseed rape assailed our eyes and nostrils, but its borders added many 'weeds of cultivation' to the plant list, with the Field Pansies (*Viola arvensis*) especially attractive. We crossed the Whareburn footbridge below the 'Black Shed' and crossed a plant-rich grassy hillside before taking the path along the valley back to the trout-farm. On this stretch we noted a stoat-trap in a field, and passed the game-farm with ornamental pheasants, poultry and peacocks.

Lunch taken in the picnic area was followed by a short drive to the Monynut valley, where we walked through the ancient oak-woods and along the ridge, finally descending to the Monynut Water again and completing the circuit along the valley-bottom. A small patch of Corn-salad (*Valerianella locusta*) was found; as this plant does not appear in the Abbey St Bathans plant list, its location has been notified to Chris Badenoch of the Nature Conservancy Council. Another 'first sighting' for some of the party was a group of Goldilocks buttercups (*Ranunculus auricomus*) which is a plant typical of ancient woodland. What, I wonder, is the advantage of the variable, rudimentary petals on this flower - is the corolla coming or going in evolutionary terms?

M. Watson

Craiglockhart Dell and Union Canal - 20 May 1987

A pleasant evening walk. Only two less common plants were seen in Craiglockhart Dell: Fly Honeysuckle (*Lonicera xylosteum*) and Fringe Cups (*Tellima grandiflora*). A patch of Lesser Trefoil (*Trifolium dubium*) was found at the beginning of the canal stretch. A delight of the evening was watching a Dipper with two young darting about in and out of the water on the opposite bank of the river, feeding.

D. Mack

Craigie Barns, Dunkeld - 23 May 1987

Twenty-two members escaped from overcast skies to assemble at Dunkeld in unexpected sunshine and warmth. Craigie Barns is an impressive hill, favoured by climbers, overlooking Dunkeld and the Tay as the river leaves its Highland course. Much of the land is afforested with Larch and Scots Pine, and its lower slopes have been favoured with more ornamental trees, including Copper Beech, some mature Grand Fir and Black Poplars. Beneath the trees are plants typical of acid grassland, such as Sweet Vernal Grass (*Anthoxanthum odoratum*), Tormentil (*Potentilla erecta*) and Heath Milkwort (*Polygala serpyllifolia*). Fallow deer are resident, and members saw Tree Pipits, Capercaillie, Roe Deer and a Kestrel during the outing. A notable find was a slow-worm. Many newly emerged Speckled Yellow Moths (*Pseudopanthera macularia*) were seen flying in the warm sunshine. After an enjoyable walk round the hill itself, including visits to a viewpoint, a 'rocking stone', and some massive boulders roofed deliberately to create caves, the party rounded off the day by examining a beech with both normal and 'fern-leaved' foliage, and by puzzling over the identity of a white-flowered plant with strap-like leaves abundant in parts of Caley Loch. A more comprehensive list of birds and plants may be obtained from the records secretary.

D. Adamson

Cramond Island - 27 May 1987

The haar which had hung over the area for the past week had lifted a little but it was still a cold evening when 14 members set out to Cramond Island. We were pleased to have the shelter of the rocks where we found Sea Campion (*Silene maritima*) and Sea Pink (*Armeria maritima*) in profusion. On the northern shore there was Purple Milk Vetch (*Astragalus danicus*). Beside the old paths Meadow Saxifrage (*Saxifraga granulata*) was found and Hounds-tongue (*Cynoglossum officinale*) in the grasses.

Coarse grasses and bracken grow over most of the island on its poor acid soil. Sycamores have colonised a sheltered central depression together with a few Willows. We found an attractive Whitebeam in bud, a young tree, but were saddened to find it had been damaged by thoughtless persons gathering wood for a picnic fire.

The cold wind kept the birds in cover but we had good views of Linnets. Wrens and Willow Warblers were heard. The sand-bars and mud-flats exposed at low tide were almost deserted at this time of year though in winter there are thousands of waders. Arctic and Sandwich Terns swooped and called. The light was failing so we returned after almost two hours on the island.

M. Robertson

Newtown St Boswells - 6 June 1987

A group of a dozen members met at Newtown St Boswells to walk along the bank of the Tweed to Lessuden (Old St Boswells). The weather was quite chilly and very changeable.

The valley of the Tweed at this point is well wooded with mature trees. In places the valley opens to reveal flat water-meadows at river level and in others is obstructed by cliffs of eroded, layered, old red sandstone which deflect the eastward flow of the river. The footpath by the river is well marked and used by many fishermen. The area is rich in flowers from spring through to autumn and the shrubby willows along the streams which drain into the river provide cover for many species of birds.

The party proceeded to the banks of the Tweed only to find that the previous day and night of heavy rain had raised the water level to a full spate and the river path was under water. We had to retrace our route and use the high path over the top of the cliffs. By this time it was raining but we were able to picnic in relative comfort at the gazebo on the mound across the river at the Dryburgh footbridge. Just below this bridge are islands with fine shingle spits which two days earlier had been populated by duck, swans, Sandpipers and Wagtails, all with young, but the area was now under fast-flowing water.

It was near this spot that several plants of Star-of-Bethlehem (*Ornithogalum umbellatum*) were found.

We were fortunate enough to have returned, by the main road, to the car park at Newtown just before the heavy rain of the previous day recommenced.

V.M. McFarland

Drapers' Field Centre - 12-19 June 1987

It was decided to pay a second visit to a Field Study Centre following the success of the Natural History course at Malham Tarn in 1986. Drapers' Field Centre, Rhyd-y-crenan, Betws-y-coed, Gwynedd, North Wales, was chosen. Eleven members took part in the studies organised by Mr A.J. Schärer, Warden and Director of Studies. The programme was as follows:

Friday, 12 June: Evening lecture on the geology of Snowdonia and surrounding areas.

Saturday, 13 June: Woodlands and forestry. A look at native Oak woodlands and forestry plantations. Diversity and management. Coed Hafod and plantations in the Gwydyr forest. Gentle walking.

Sunday, 14 June: Rocky shore. Zonation of marine life on an exposed shore. Penmon, Anglesey.

Monday, 15 June: Fresh water ecology. A look at life in fresh water. Adaptations to localised habitats and niches. Local river. Walk in Fairy Glen and visit to Swallow Falls.

Tuesday, 16 June: Sand dunes. Changes with time on a sand dune system. Plant adaptations to extreme conditions. Norfa Harlech.

Wednesday, 17 June: Limestone vegetation. The effect of limestone on plants of Great Orme, Llandudno.

Thursday, 18 June: Mountain and moorland. A visit to this rugged, glaciated area to see Arctic/Alpine survivors. A longer mountain walk. Cwm Idwal.

Friday, 19 June: Depart.

It was again a rewarding week in spite of the poor weather which necessitated changing the outings round a bit, and high tide at the rocky shore which prevented us from exploring the rock pools as we had planned. Evenings were spent either in the laboratory or on other excursions by mini-bus. Our leader was Geoff Barber, late of the Yorkshire Dales National Park. Members have contributed the following accounts of our activities.

M. Robertson

Saturday, 13 June

Very little of Snowdonia National Park has retained its native broadleaf woodland. The areas felled during the First World War have largely been replanted with coniferous exotic species. Much of the remaining broadleaf woodland is prevented from regenerating owing to the destruction of seedlings through grazing.

Coed Hafod enjoyed a reduction in grazing around 150 years ago and the existing mature trees mainly date from this time. In 1979 the wood was acquired by the National Park and fencing and planting has been carried out to encourage some regeneration. In particular, two areas have been set aside as monitoring sites. The oak trees are now approaching maturity but the birch trees, with a shorter life span, are past their prime. The monitoring showed that oaks were only regenerating naturally on sites cleared of mature trees, despite the absence of grazing pressure. Therefore some older trees have been felled and seedlings encouraged or deliberately planted.

Our first full day at the Field Centre involved a visit to the Oak-wood where we spent a relaxing and instructive day acquainting ourselves with the birds, plants and fungi of the wood. The decay of the birch trees benefited the ornithologists amongst us, who watched a young male Great Spotted Woodpecker excavating a hole in a dead or dying Birch. Redstarts were seen flitting beneath the Oak canopy and Nuthatches were heard. The rich moss covering on boulders, soil and trees, and the fungi appearing after the damp weather, provided ample interest for the botanists and compensated for the relative paucity of flowers. In mid-afternoon the Snowdon Range and Conwy Valley were the background to a hovering Buzzard the views of which together capped an enjoyable outing.

D. Adamson

Monday, 15 June (a.m.)

On the Monday morning of our week in North Wales we visited the Fairy Glen by the River Conwy, south of Betwys-y-Coed.

The gorge, similar to the Hermitage of Braid, was likewise caused by a glacial flush. We walked up-river through woodland and noted all the usual woodland flowers and many species of grasses and sedges. Groups of Heath Spotted Orchids (*Dactylorhiza maculata*) and Common Spotted Orchids (*D. fuchsii*) grew in a boggy area, and in the neighbouring water-filled ditches Ivy-leaved Crowfoot (*Ranunculus hederaceus*) grew in abundance. Yellow Flag (*Iris pseudacorus*), Cuckoopint (*Arum maculatum*) and Yellow Pimpernel (*Lysimachia nemorum*) added colour to the dull day.

Five miles up-river we arrived at the Swallow falls. The water cascades over 50 feet, bifurcating near the top to form two wings. The falls were in full force due to the heavy rain.

The beautiful deep banks of the gorge supported many species of Pine along with Oaks, Alder and Rowan. Upended slate slabs added to the interesting topography. Golden Rod (*Solidago virgaurea*), Lady's Mantle (*Alchemilla vulgaris*) and Yellow Globe flowers (*Trollius europaeus*) grew amongst the large erratic boulders by the river.

Due to the inclement weather not many birds were seen. Four Yellow Wagtails flew about the riverside. Our attention was drawn to a raucous noise in the sky. A Buzzard being mobbed by two Magpies. We watched this argument for a good ten minutes.

A most enjoyable walk.

L. Laidlaw

Monday, 15 June (p.m.)

Looking at freshwater animals was the intended afternoon activity. However, on being told we were expected to wade out across the river and in all probability the water would be over the top of our wellies, most of the party fled in all directions.

The remaining brave souls sampled organisms from the middle of the River Conway by kicking the stony substratum while holding a net down-river. The collection was taken back to the laboratory for closer inspection.

Some animals were found in considerable numbers, such as Mayflies, Caddisflies, Chironomids and Simulids. In each of these groups it is the *larval stage* which is aquatic and two of the group are particularly well adapted to live in fast-running water.

The Mayflies are in the order Ephemeroptera and those living in fast-flowing water are perfectly adapted for that habitat. The body and limbs of the family Ecdyonuridae are flattened to such a degree that when they cling to the stones with their strong claws, their body follows the contour of the stone and so decreases their chances of being swept away by the current. They are extremely poor swimmers and when knocked off the stone, they are likely to drift with the water till they land and can cling to another stone. The adults are the familiar, delicate, long-bodied insects with large wings and long streaming 'tails', and are extremely short-lived.

Another family of Mayflies, the Baetidae, are extremely agile, fast swimmers and can live between the stones.

In the order Diptera, true flies, is the family Simulidae which are tiny black flies. The females suck blood, including human blood. The larva is a tiny sausage-shaped legless grub. At one end of the body there is a ring of strong hooks which can attach the animal firmly to stones. At the other end is a mouth opening, surrounded by a pair of fan-shaped brush-like appendages which waft food into the mouth. Just below the mouth the larva has a stumpy appendage which also has a ring of hooks. By anchoring one end at a time the animal can loop across the stones in a leech-like manner.

E. Gillespie

Wednesday, 17 June

We visited Great Orme, Llandudno, a limestone headland and sea cliff. It was cold and dull after early morning rain, but the sun shone briefly in the afternoon. We first had a look at the exhibition and video in the Visitor Centre.

In a newly built wall, we found fossils, 300 million years old, seeing the light of day again. We found a rich flora, though it was dwarfed by grazing. Common Rock-rose (*Helianthemum nummularium*) carpeted the pasture and we soon found *H. canum*, the Hoary Rock-rose on the stony outcrops of limestone. Other species included Salad Burnet (*Poterium sanguisorba*), Dropwort (*Filipendula vulgaris*), Kidney Vetch (*Anthyllis vulneraria*), the last of the Spring Squill (*Scilla verna*) and one or two Juniper bushes.

The limestone pavements are not as fine as Gait Barrows (which we explored last year) but yielded a good variety of plants, such as Bloody Cranesbill (*Geranium sanguineum*), Spring Sandwort (*Minuartia verna*), Rue-leaved Saxifrage (*Saxifraga tridactylites*), Dark-red Helleborine (*Epipactis atrorubens*) in bud and the rarity, *Hieracium cambricum*, a Hawkweed found only in Wales and chiefly in this area. It has narrow, glaucous leaves with long teeth on each side.

Ferns find an ideal habitat in the shade and shelter of the grykes. Brittle Bladder Fern (*Cystopteris fragilis*) and Black Spleenwort (*Asplenium adiantum-nigrum*) were noted particularly.

A small area had been fenced off recently to exclude sheep. Here we found *Cotoneaster microphyllus* in flower as well as Privet and Blackthorn, all dwarfed but beginning to benefit.

We found many banded snails in a variety of markings, obviously exploited by Thrushes. Several species of fungi were found including field mushrooms and beautiful specimens of St George's Mushroom.

Grasses included *Briza media, Vulpia bromoides* and *Aira caryophyllea*. Detailed lists are recorded. There were few birds: Linnets and Skylarks, and offshore, Guillemots.

M. Robertson

Thursday, 18 June

The main excursion on the last day was to the mountain habitat of Cwm Idwal in the Snowdonia National Park. However, on the way there, a brief stop was made at Llyn Elsi, a reservoir built to supply water for Betws-y-Coed, which lies in the valley immediately below. This was a most picturesque spot. The reservoir with its numerous bays and irregular shoreline looks entirely natural. Driving through the woods to the lake, we had a marvellous sighting of a Jay. On our arrival at the reservoir a Tree Pipit was seen and several Coot and Black-headed Gulls were on the water. A Redstart and a Blackcap were also observed. In a wet area beside the path Round-leaved Sundew (*Drosera rotundifolia*), Bog Asphodel (*Narthecium ossifragum*), Bottle Sedge (*Carex rostrata*), Deer

Grass (*Scirpus cespitosus*), Bog Myrtle (*Myrica gale*), Marsh Violet (*Viola palustris*) and Cross-leaved Heath (*Erica tetralix*) were growing. We also came across Water Horsetail (*Equisetum fluviatile*) and Marsh Horsetail (*Equisetum palustre*).

Between this reservoir and Llyn Ogwen below Cwm Idwal the road took us through splendid mountain scenery, which became more and more dramatic, culminating in the peak of Tryfan at one end of Llyn Ogwen.

On the walk up from Llyn Ogwen towards Llyn Idwal marvellous views were obtained of the surrounding landscape. Looking down on the main road towards Bethesda the whole stretch of the valley was visible. This valley with its lofty steep-sided mountains and the deep corries in between was most awe-inspiring.

The landscape immediately surrounding our objective was equally so. This effect was heightened by the mist which lingered all day over a side corrie above the main corrie in which our destination, Llyn Idwal lay. This side corrie was balanced by one on the other side which again was above the level of the main corrie. Llyn Idwal itself was only visible after walking a little way from the road. At the top of the slope immediately in front of Llyn Idwal there was a gap called the Devil's Kitchen.

At one point on the way up, the path traversed a slope with rocks cantilevered on others. On arriving at Llyn Idwal, a man-made path took us to the top of the lake. Several large groups of people were strung out along its length and also on the path on the other side of the lake. To me this contrasted with what I had seen in Scotland. Such evident popularity of this and other areas for walking must inevitably lead to heavy pressure on the land with the consequent danger of erosion. It was clear from this how vital it is to have constantly maintained man-made paths in such areas, so that people can be channelled onto a recognised route where erosion can be cut or totally prevented and further damage minimised.

Within minutes of starting the walk we saw three Clubmosses - Stag's-horn (*Lycopodium clavatum*), Fir (*Lycopodium selago*) and Alpine (*Lycopodium alpinum*) - growing close together. On our nearing the head of the lake a Grey Heron was observed moving stealthily through the lakeside vegetation. The cry of a Ring Ousel was heard as we were ascending the slope at the top of the lake and after carefully stalking it for a little, it was seen moving amongst the rocks with food in its mouth. The most rewarding area botanically was the Cwm where limestone is present. Beech Fern (*Phegopteris connectilis*), Parsley Fern (*Cryptogramma crispa*), Oak Fern (*Gymnocarpium dryopteris*) and Brittle Bladder Fern (*Cystopteris fragilis*) were found amongst the rocks. Starry Saxifrage (*Saxifraga stellaris*), Purple Saxifrage (*Saxifraga oppositifolia*), Mossy Saxifrage (*Saxifraga hypnoides*), Opposite-leaved Golden Saxifrage (*Chrysosplenium oppositifolium*), Moss Campion (*Silene acaulis*), Roseroot (*Rhodiola rosea*), Golden Rod (*Solidago virgaurea*), Mountain Sorrel (*Oxyria digyna*), Common Spotted Orchid (*Dactylorhiza fuchsii*), Round-leaved Sundew (*Drosera rotundifolia*), Common Butterwort (*Pinguicula vulgaris*), Green Spleenwort (*Asplenium viride*), Maidenhair Spleenwort (*Asplenium trichomanes*) and Pendulous Sedge (*Carex pendula*) were also found. At the water's edge Water Lobelia (*Lobelia dortmanna*) was growing. Our route then lay across the boulder-strewn slope below the Devil's Kitchen. One boulder I passed had parallel wavy lines on its underside, a feature which I presumed indicated the tidal action of water of many millions of years ago in the early part of the earth's history. Before leaving this area, we noticed a Meadow Pipit and a Wheatear.

We now returned on the other side of the lake, following the very well constructed man-made path all the way down to Llyn Ogwen. The banks of the streams flowing into Llyn Idwal have been strengthened at those points where the path crosses. A party of climbers was observed on the Idwal Slabs, which form part of the side wall of the corrie just across the lake from where we were. At the very end of the walk, we passed a waterfall and then a long cleft in the hillside, both of which were most striking.

R.C. Clark

Beecraigs Country Park, Linlithgow - 27 June 1987

At this joint outing with the Dundee Naturalists it was disappointing that the 30 or so from Dundee were matched by so few from our Society. It remained cloudy all day, but the rain kept off until the outing was over.

The Ranger, Christine Dudgeon, led the group starting from the Balvormie car park. A brief stop was made at the pond which has been recolonised with shrimps and newts since it was recently relined.

From the pond we went round the field where many orchids grew but these were not yet in flower. Pignut gave a sheet of white over much of the field, indicating the presence of a belt of limestone. The path from the field passed through conifers and a patch of Marsh Violets which is being encouraged to increase, being the food plant of the Pearl-bordered Fritillary. A walk to the top of Cockleroy (which is outwith the Park) gave only moderate views, the day being cloudy.

The return route took us through some of the hardwoods of the Park, probably planted in the 1700s.

During the day many common and attractive flowers were seen and identified, but of particular interest to everyone were Mountain Pansy, Heath Speedwell and one Greater Butterfly Orchid coming into flower.

E. Farquharson

Silverknowes foreshore - 1 July 1987

'Gypsy Brae' has changed in recent years. A dry, gravelly hollow where plants struggled to exist, is now a lush grassy place regularly cut to make an attractive recreation area for holidaymakers at the Silverknowes camping site.

A promenade has also been extended and improved along the foreshore. The land rises steeply about 50 feet, being a raised beach. At the foot of the slope a wire fence has been erected, behind which young trees, Hawthorn, Rowan, Maple, Poplar and a few conifers have been planted, and the natural vegetation allowed to develop. Various pathways with steps give access to Marine Drive at several points. Old trees from the parkland of Muirhouse Mains have been left as well as the fringe of trees on the slope. The contrast on either side of the fence is very interesting to the naturalist, and the summer meadow vegetation behind it was a delight to see with many grasses and Ox-eye Daises.

In a wet flush there is a good colony of both Common Spotted Orchids (*Dactylorhiza fuchsii*) and Northern Marsh Orchids (*D. purpurella*). Fifteen years ago there were very few orchids so it was pleasing to see how the colony had thrived. Greater Bird's-foot Trefoil (*Lotus uliginosus*) is also present and Soft Rush (*Juncus effusus*). We hope the developing trees planted will not destroy their habitat. Further along we found Tuberous Comfrey (*Symphytum tuberosum*) developing beside a tree and Wormwood (*Artemisia absinthium*) growing beside Mugwort (*A. vulgaris*). White Campion (*Silene alba*) was also present.

Among the trees were a Hornbeam and a Norway Maple.

Wading birds come to the fields at high tide in winter as well as Redwing, so there is always something of interest in this little-known area.

M. Robertson

Ballinluig shingle beds, Pitlochry - 11 July 1987

We were lucky to have a sunny day for our trip to Ballinluig Island. The 'island' lies in the River Tummel a few miles south of Pitlochry and has been created by the gradual deposition of river shingle. Now it is quite well covered with vegetation, including an assortment of trees, and is in fact no longer an island as shingle has bridged the gap to the west bank. The area is a Scottish Wildlife Trust reserve.

The party met by Ballinluig Bridge, and began with a diversion to look at Motherwort (*Leonurus cardiaca*) in a nearby hedgerow - not yet in flower and apparently suffering some competition from the other hedgerow plants. However, we were delighted to see a few old-fashioned cornfield weeds in a nearby field, including Corn Marigold (*Chrysanthemum segetum*) and Musk Mallow (*Malva moschata*). Then it was 'into the woods' following the SWT waymarks to the island.

The woods were not without interest - Wood Stitchwort (*Stellaria nemorum*) is by no means common, and there were large patches of Hard Shield Fern (*Polystichum aculeatum*) overhanging some extensive ditches. But the island itself was a delight - dappled with sunlight and sheltered from the breeze, a haven not only for an interesting mixture of plants but also for many attractive butterflies and moths. Among the latter we recorded the Orange Tip, the Ringlet and the Dark Green Fritillary as well as commoner species like the Chimney Sweeper moth and the Common Blue butterfly. There was also a splendid specimen of the Beautiful Golden Y moth which looked as if it had only just emerged from its pupa.

To return to the plants - as we approached the island we encountered quantities of Lesser Meadow-rue (*Thalictrum minus*) in the shingle, and then between patches of scrub and taller vegetation a splendid selection of plants normally associated with dry banks and basic rocks: Rockrose (*Helianthemum nummularium*), Kidney Vetch (*Anthyllis vulneraria*), Quaking Grass (*Briza media*), Fairy Flax (*Linum catharticum*), Alpine Bistort (*Polygonum viviparum*), Northern Bedstraw (*Galium boreale*) and Sea Campion (*Silene maritima*). The last three or four are alpines which have probably been washed down from the hills. Taller plants included Wood Cranesbill (*Geranium sylvaticum*) and Melancholy Thistle (*Cirsium helenioides*). We stopped for lunch on a kind of 'raised beach' of shingle and so got to close quarters with some of the smaller and less conspicuous plants - Moonwort (*Botrychium lunaria*), Knotted Pearlwort (*Sagina nodosa*) and Shepherd's Cress (*Teesdalia nudicaulis*) among others.

The far shore of the island was almost pure shingle, but plants had established themselves here too - Alpine Cinquefoil (*Potentilla crantzii*) from the hills, Skull Cap (*Scutellaria galericulata*), Corn Mint (*Mentha arvensis*) and brilliant clumps of Maiden Pink (*Dianthus deltoides*) which seems to be a particularly deep colour here. Patches of Enchanter's Nightshade (*Circaea* sp.) provoked some discussion. (I still think it's x *intermedia.*)

Wetter areas produced an assortment of marsh plants and sedges including both Bottle Sedge (*Carex rostrata*) and the much less common Bladder Sedge (*Carex vesicaria*), while a different route back through the woods revealed Beech Fern (*Phegopteris connectilis*) and Oak Fern (*Gymnocarpium dryopteris*).

Fungi recorded (mainly in the wooded areas) ranged from a Rust (*Puccinia caricina*) on a nettle to that elegant pink Amanita, The Blusher (*Amanita rubescens*), by way of the jelly-like Yellow Brain Fungus (*Tremella mesenterica*) growing on twigs; Sulphur Tuft (*Hypholoma fasciculare*) on stumps; a colourful selection of Russulas; one of the Puff-balls (*Lycoperdon perlatum*); and the descriptively-named Stinkhorn (*Phallus impudicus*).

Other members of the party concentrated on birds and quite a variety were recorded, including in the woods Goldcrest, Blackcap and Willow Warbler, as well as many of the commoner Thrushes, Finches and Tits. Oystercatchers, Sandpipers and two Red-breasted Mergansers in eclipse were seen on (or above) the river, as were Swallows, Swifts and House Martins and the inevitable Gulls. Jays provided both noise and colour, and a Magpie (noted being mobbed by Jays) turned out to be the most exciting record of the day, not having been recorded on the reserve previously. A disturbed game bird was probably a Woodcock and the only bird of prey seems to have been a Kestrel. As for mammals, one of the highlights of the trip was when a Roe Deer broke cover and swam across the river.

All in all it was a most enjoyable day, and thanks are due to all those who kept lists, and to George McDougall who knew the area of old and made sure that no members of the party were either lost in the woods or abandoned on the island!

Plant, bird and insect lists are lodged with the Society as usual.

J. Muscott

Inversnaid RSPB Reserve, Loch Lomond - 25 July 1987

On a sunny, warm, dry day - a rare treat in the soggy summer of 1987 - 13 members gathered for a walk over part of the RSPB reserve at Inversnaid under the guidance of the Warden, Mike Trubridge.

The land was bought by the Society in March 1986 and comprises 923 acres of woodland and moorland to the north of the Inversnaid Hotel. The north-western part of the reserve is a Site of Special Scientific Interest, Grade II. The woodland, which is an SSSI Grade I, contains every native tree in Britain except two - the Lime and, surprisingly, the Scots Pine. There are, of course, Scots Pines growing nearby and it is planned to introduce this tree into the reserve: Limes are found within six miles. Some surveys have already been done on the reserve and a management plan covering the next five to ten years should be ready by next year.

After an interesting talk about the reserve by Mike Trubridge (and advice on how to deal with any ticks that might drop on us as we made our way through the undergrowth!) we started off along a short stretch of the West Highland Way before turning on to the wooded hillside. There was no path and it was quite a steep scramble up through the trees and shoulder-high bracken. Unfortunately, at this stage we were sheltered from the refreshing breeze from the north-west and this left us at the mercy of squadrons of midges, which attacked us with great ferocity.

A burn ran down through the woods and on a slab of rock by its side there was a large patch of Wilson's Filmy Fern (*Hymenophyllum wilsonii*), looking rather dry. Tunbridge Filmy Fern (*Hymenophyllum tunbrigense*) is also found on the reserve but not in the area we visited.

On this lower part of the hill we passed the crumbled remains of an old settlement - five houses and some lazy-beds - which were just discernible amongst the undergrowth. The settlement had been inhabited until the beginning of this century.

Birds were heard and briefly seen as we moved through the woodland - Chaffinch, Wood Warbler, Siskin, Tree Pipit and Great Spotted Woodpecker. One of the success stories of the reserve is that 19 pairs of Pied Flycatchers have used the nesting boxes provided this year. Flowers, too, to delight the eye, and the nose in the case of Bog Myrtle (*Myrica gale*). Bog Asphodel (*Narthecium ossifragum*), Cross-leaved Heath (*Erica tetralix*), Bell Heather (*Erica cinerea*) and Marsh Willowherb (*Epilobium palustre*) were all blooming on the upper hillside; and lower down, Yellow Pimpernel (*Lysimachia nemorum*), Enchanter's Nightshade (*Circaea lutetiana*), a carpet of Common Cow-wheat (*Melampyrum pratense*) and Tormentil (*Potentilla erecta*) were found among many others.

We decided to stop for lunch at the top of the hill. We were by then in the cooling breeze again and the view was superb over Loch Lomond to the bens beyond. Two Buzzards were circling the hillside and the loch, an adult and a young one. Both birds were calling, the youngster giving the hunger call to the parent. The nest was on a crag about halfway down the hillside.

Also near our picnic site was a Willow that had been closely grazed - probably by goats, although their favourite nibbles are ash, holly and rowan. There are about 300 feral goats localised on the east side of Loch Lomond. Of these, 80 to 90 are on the reserve, together with about 100 red deer and 30 roe deer, and much thought is being given at present as to how many grazing animals the reserve can comfortably sustain.

After lunch we moved off over a stretch of moorland, passing a red deer mud wallow on the way, and then downhill to the Snaid Burn, spotting among other flowers, Eyebright (*Euphrasia officinalis*), Milkwort (*Polygala vulgaris*), Round-leaved Sundew (*Drosera rotundifolia*), Lousewort (*Pedicularis sylvatica*), Lesser Spearwort (*Ranunculus flammula*), Climbing Corydalis (*Corydalis claviculata*) and Spignel (*Meum athamanticum*), a more uncommon find and only this year discovered in the area. Two red deer were seen grazing on the hill-top and we surprised a roe deer, which bounded away and quickly disappeared among the bracken.

While on the moorland we were visited by a fierce-looking fly, about one inch long and of robust build, which alighted on several of the party in turn. It was eventually captured in a plastic box and after being examined it was identified as a *Tabanus sudeticus* (a horse fly) and released.

Crossing the burn we came to ruins of a garrison built in 1718. A small section of the old military road leading from the garrison, over the hill to a harbour on Loch Lomondside has been excavated (the top-soil is about a foot in depth) and it is hoped to use this old road when it has been cleared as one of the paths through the reserve. The garrison, which would have housed 80 men at a time, was sacked in 1745 but must have been in use after that, as a stone in the nearby burial ground commemorates the men who died in the fort during the period 1721-1796.

Mike left us at his cottage by the Snaid Burn and we walked back to the Inversnaid Hotel car park by the very pleasant, winding road. It had been a rich day because we had not only covered many aspects of the natural history of the reserve, but of local history as well.

D. Mack

Butterfly Farm, Gilmerton - 1 August 1987 (a.m.)

Mr Gordon Spiers, the curator, gave us a very interesting demonstration of the rearing and breeding techniques used at the Butterfly Farm, and gave us an insight into some of the problems such as finding acceptable food plants for foreign species and keeping the stock healthy at all times. It seems to be an advantage to close down each winter, clean out, sterilise and start up again the following April.

M. Robertson

Gore Glen, Arniston - 1 August 1987 (p.m.)

Gore Glen, Arniston, a former coal bing reclaimed as a leisure area, has changed a lot since our last visit in July 1984. Birch scrub invading the old railway line has been cut back, allowing herbaceous plants to colonise and keeping the path clear. The willow, birch, alder and conifers planted on the re-shaped bing slopes are now well established. The fumarole still steams and attracts banded snails which fall into the hot crevices. Floodwater has changed the pond area yet again, the pipe to keep the water topped up has become dislodged and is now useless; one of the gabion baskets which anchored it in position has been swept away to the opposite bank of Gore Water. Fresh-water plants, grasses and sedges now crowd the gravel round the pond's shrunken perimeter and fill the damp hollows remaining, where tiny toads and frogs were seen.

Various observations have indicated the importance of bing sites as the refuge for many uncommon plants. Notable species can be found on these impoverished sites, but this no doubt is why they are there. The soils have developed slowly since the cessation of waste tipping and are not very fertile which would otherwise attract more nutrient-demanding species. The waste material is very variable and so presents a wide range of environmental conditions to be exploited. As a result the variety of plants that can be discovered on bings is remarkable.

Among the more unusual plants we noted the following new species: Red Bartsia (*Odontites verna*) and Sand Spurrey (*Spergularia rubra*) on the gravelly slopes leading to the top of the old Foley bing; Common Vetch (*Vicia sativa*) and Cut-leaved Cranesbill (*Geranium dissectum*) grew amongst the grasses, where we disturbed a hen partridge and small chicks. The Spotted Flycather was seen feeding young in the birch trees here. At the woodland edge we found several spikes of the Broad-leaved Helleborine (*Epipactis helleborine*) and Wood Sedge (*Carex sylvatica*). Pendulous Sedge (*C. pendula*) grew in a wet flush. Near to it was the Hairy St John's Wort (*Hypericum hirsutum*). Spotted Orchid (*Dactylorhiza fuchsii*) now grows on the old railway track and at the foot of the bing slope where we also found Common Centaury (*Centaurium erythraea*) and Hop Trefoil (*Trifolium campestre*) recently established.

Horse Mint (*Mentha longifolia*), Winter Cress (*Barbarea vulgaris*) and Weld (*Reseda luteola*) were around the pond while below the trees there we saw Giant Bellflower (*Campanula latifolia*), a good colony of Spotted Orchids, with perhaps a hybrid species, and Wood Melick (*Melica uniflora*).

M. Robertson

The Birks of Aberfeldy - 22 August 1987

The leader for this outing was Mike Scott, one of the four Scottish members of the British Pteridological Society. As a preparation he had given a talk the previous Monday, entitled 'Know Your Ferns', so members were ready to discover and differentiate between the various species.

Whilst still in the car park, beside a bush of Red-berried Elder, we found both the Male Fern (*Dryopteris filix-mas*) and the Lady Fern (*Athyrium filix-femina*). The Birks or Beech trees lie on either side of the Moness Burn on which are three waterfalls, the Falls of Moness, and the path climbs up one side of the burn, crosses by a bridge below one of the waterfalls and then follows the stream down the other side and so back to the car park.

On the upward path there were stands of Bracken (*Pteridium aquilinum*) which grows in solitary fronds and not in shuttle-cocks as does the Scaly Male Fern (*Dryopteris pseudo-mas*) which was the next fern seen.

Much time was spent examining the sporangia on the underside of the fronds, as this is one important item in identification. Especially interesting are those of the Lemon-scented Fern (*Oneopteris limbo-sperma*) which lie near the margins of the pinnules thus outlining the shape. When crushed this fern has a distinct smell of lemons. Next to be found was the Oak Fern (*Gymnocarpium dryopteris*) a little tri-pinnate fern which looks almost triangular because the bottom two pinnae are often as long as the rest of the leaf. With the total number of ferns seen standing at six, we crossed the bridge, admiring the view across to the far side of the Tay Valley on our left and the waterfall on our right, and on reaching an open area settled down for lunch. Back on our feet, we passed the solitary head of a Melancholy Thistle (*Cirsium helenioides*) and then another small fern, the Beech Fern (*Phegopteris connectilis*) whose bottom two pinnae are on a different plane and bend back, some say like a Victorian moustache. This fern likes moisture round its roots. Hard Fern (*Blechnum spicant*) looks quite different and, being dimorphic, has two types of frond. The outer ones are barren and spreading, whilst the inner ones are more upright and carry sori on narrow leaflets. Next we saw the Brittle Bladder Fern (*Cystopteris fragilis*) in the cleft of a huge rock. Here the word bladder refers to the indusium, or covering, over the spores. Green Spleenwort (*Asplenium viride*) with a green midrib and which grows only on lime-rich rocks was seen next. On the far side of the burn and inaccessible to us, huge solitary fronds of Hard Shield Fern (*Polystichum aculeatum*) were hanging down against the dripping rocks.

Nearly at the end of the path, there was a seat called Burns' Seat, reputedly the place where the poet wrote 'The Birks o' Aberfeldy'. Beside the seat was a set of wooden steps and, as we climbed down, our attention was drawn to some Beech Fern holding water droplets, giving an almost jewelled appearance.

Last, a plant related to the ferns, the Shady Horsetail (*Equisetum pratense*) was seen. During the last part of the walk, we had felt the odd drop of rain and on returning to the car park, there was only time to thank our leader for a most interesting day before the rain lashed down.

J. Lyburn

Fungus foray in Hermitage of Braid, Edinburgh - 5 September 1987

At this joint meeting with the Botanical Society of Edinburgh some 36 members, their families and friends met to explore the steep wooded gorge that encloses the Braid Burn, in the shadow of Blackford Hill. Led by Dr Philip Mason (ITE) and Alan Bennell (RBG) the party spent the morning exploring the upper reaches of the north-facing south bank of the burn. In an early and reportedly prolific season the western end of the woods yielded very little, the ground flora beneath the mixed deciduous trees and small conifer plots being smothered by undergrowth or exposed as naked muddy slopes.

However the deep litter beneath the areas of mature beech provided a characteristic array of mycorrhizal species (including *Russula ochroleuca, R. mairei, Lactarius subdulcis, L. blennius, Laccaria proxima, L. amethystea*). One steep slope also provided an extensive harvest of *Craterellus cornucopioides* (Horn of Plenty) destined to enhance many stews and patés over the coming months.

After lunch the party retraced its steps across the south-facing north bank of the burn, where the pungent smell of *Phallus impudicus* filled the air.

The other productive habitats were the boles of dead trees, cloaked in numerous rotters: *Hypholoma fasciculare, Stereum hirsutum, Coriolus versicolor* and *Heterobasidion annosum,* as well as the bonfire and sawdust piles, a testimony to the necessary felling and burning of diseased elms in this woodland. Dutch Elm Disease was very noticeable, especially in stools regenerating from stumps. The bonfire sites displayed the characteristic Ascomycete flora: *Peziza echinospora, Anthracobia macrocystis* and *Peziza praetervissa* in abundance.

The 60 species were laid out for discussion on tables beside the Hermitage Visitor Centre, courtesy of the Park Rangers, all of whom, along with many passing members of the public, were attracted by the colourful and, given the presence of a mature *Phallus*, aromatic display.

A.P. Bennell

Tyninghame, East Lothian - 12 September 1987

Mr David Jones led a party of 16 members along the shore at Tyninghame. There is an interesting account, written by David of a similar outing, in the ENHS Journal 1985.

This year samples were collected, kept in cold storage and examined more closely in our study room at Donaldson's School on the following Monday evening.

David began this session by reminding us, with the aid of slides, of what we had seen and learnt on the Saturday. Then while we examined the specimens under magnification he patiently answered the many questions put to him. We were able to identify the crustacean, *Idotea granulosa*, the scale worm, *Harmothoe impar*, and the green ragworm, *Eulalia viridis.*

E. Gillespie

Moorfoot Hills - 19 September 1987

On a fine morning 21 members set off from the Horse Shoe Inn car park, Eddleston for a walk in the hills - destination the summit of Dundreich (2040 feet). Our leader was Joan Lyburn.

Before we even set out from the car park Robin, Goldfinch, Jackdaws and Starlings had been noted, as well as a mixed flock of House Martins and Swallows darting about overhead.

Our route through the village took us past Eddleston Church and here we made a short stop while Joan told us some of its long history. There has been a church on the site since 1100 AD and although the present building dates from 1829, its Flemish bell is much earlier - 1507. Over the years from 1696 to 1856 the ministers who served the church all came from the same Robertson family, a unique record in Church of Scotland history.

From the village the path climbed steadily, by Boreland Farm through fields that led to the open hillside. On this stretch we saw Dove's-foot Crane'sbill (*Geranium molle*), Hop Trefoil (*Trifolium campestre*) and Shepherd's Purse (*Capsella bursa-pastoris*), and over a belt of trees a pair of slowly circling Buzzards.

As we approached Brown Dod a Raven was spotted flying from the hill and disappearing round the side. We stopped for lunch on the flank of Brown Dod. By this time the south-westerly breeze was somewhat brisk and the clear sky of the morning had clouded over.

After lunch we continued on our way round Brown Dod and across a stretch of moorland pitted with peat hags and carpeted with Heather (*Calluna vulgaris*), Blaeberry (*Vaccinium myrtillus*) and Crowberry (*Empetrum nigrum*): a Hare bounded away to cover as we approached the final slope that took us to the summit of Dundreich.

The panorama from the top was superb. From Arthur's Seat and Berwick Law to the north-east, one could sweep round the Lammermuirs, Moorfoots and on to Tinto in the distance. Below, on a knoll, could be seen the three ramparts and ditches of Northshield Rings, an ancient hill fort.

On our path downhill to Portmore Loch, which took us by the side of Fala Steel pine wood, a large clump of Purple Moor-grass (*Molinia caerulea*) was noted, also Marsh Thistle (*Cirsium palustre*), Wild Thyme (*Thymus drucei*) and Selfheal (*Prunella vulgaris*), and a little patch of Toad Rush (*Juncus bufonius*) at the boggy bottom.

The breeze had dropped by the time we reached the loch and it was quite still: a flock of about a dozen Tufted Duck and two Great Crested Grebe were on the water. A splendid spread of Reed Canary-grass (*Phalaris arundinacea*) bordered the loch, and patches of Amphibious Bistort (*Polygonum amphibium*) flourished in the water. A Heron rested on a hill-slope at the far side: it sat there for a while before flapping off into a nearby wood.

Our homeward route now led by a farm track, once more passing through Boreland. On this path, and over quite a short stretch of it, we found Eyebright (*Euphrasia officinalis*), Lousewort (*Pedicularis sylvatica*), Devil's-bit Scabious (*Succisa pratensis*) and Grass of Parnassus (*Parnassia palustris*).

Our luck didn't quite hold out weatherwise to the end as the rain came on heavily before we reached the car park again, but it certainly didn't dampen the great enjoyment of this day in the hills.

D. Mack

Menstrie Glen, Alva - 10 October 1987

This well-attended meeting was in conjunction with the Botanical Society of Edinburgh and the British Mycological Society. It was led by Alan Bennell and Brian Coppins.

In warm and sunny weather the party made their way up the steep-sided glen throughout the morning. During the lunch break Dr Roy Watling identified the morning's finds which included several Wax-cap fungi. Many examples of *Hygrocybe laeta* were found among the bracken; also *H. ceracea* with a yellow sticky cap (but not sticky on the stem); *H. flavescens* with a faintly punctate stem; *H. psittacina*, the parrot-cap; *H. punicea*; and the prime find, without a doubt, *H. calyptraeformis*. This beautiful fungus has sometimes been called 'the ballet dancer' because of the elegant manner in which the cap splits regularly and flares out like a dancer's tutu. *H. obrussens* was found, also the Butter Wax-cap, *Camarophyllus pratensis* and the white *C. nivea*.

In the afternoon the party broke up into small groups. Some went higher up the glen, others climbed Dumyat, a few made their way down on the other side of the glen.

Two new books on fungi were discussed. One, already published, is by Marcel Bon and includes spore drawings which will help with microscopic identification. Another, to be published during 1988, is by Stefan Buzacki and will be a replacement for the faithful Collins *Guide to Fungi*.

E.McA. Smith

A highland fling - 17-24 October 1987

A small group of Society members spent a most enjoyable week based on Strathpeffer. Excursions each day were admirably led by Sandy Mitchell of Albannach Insight Holidays and each evening we returned to excellent hospitality at Timaru House Hotel.

We were fortunate with the weather. Whilst southern Britain reeled under flood and gale damage, for the first half of our week we experienced Indian summer conditions - mild, sunny and very still. The second half saw more normal temperatures with night frost and scattered showers.

On our first morning we were wakened by Buzzards mewing over Strathpeffer. This set the tone for the week with birds dominating our observations. Individual Herons were frequently seen by by sea-shore and by loch-side. At Munlochy Bay on the Moray Firth, 14 birds were seen in a heronry. Family groups of Mute Swans were also seen quite often whereas near to Invergordon some 200 Whooper Swans had recently returned to their regular winter quarters. Greylag Geese were much in evidence with an estimated 2000 congregating at dusk on Loch Eye and a similar large number present near Skibo on the Dornoch Firth. In contrast, on a warm sunny beach at Gairloch, a single juvenile Brent Goose was busily feeding on seaweed along the shoreline quite unperturbed by our close presence. *Laminaria saccharina* was the dominant seaweed present but the goose was feeding on the fine strands of an *Enteromorpha* seaweed. Razor shells were numerous on this beach and included the large straight *Ensis siliqua*, the slightly curved *E. arcuatus* and the smaller *E. ensis*. Visibility was good on this day and both Inner and Outer Hebrides were clearly seen.

On a visit to Gruinard Bay we saw a raft of 20 Black-throated Divers, a smaller number of Red-throated Divers and a Great Northern Diver still in summer plumage. Red-throated Divers were also seen on the east coast, both at Loch Fleet and flying off Tarbat Ness. The Society telescope was frequently put to good use. On a coastal walk north of Balintore in Easter Ross both Arctic Skuas and Great Skuas were seen whereas further north near Loch Fleet Long-tailed Ducks were observed fishing and a flock of Ringed Plovers was well camouflaged on the pebbly part of the shore. At Tarbat Ness flocks of Redwings and of Twites were in evidence, Scaup were seen near Meikle Ferry, Goldfinches at Balintore, Long-tailed Tits, Stonechats and Rock Pipits at Gruinard, Coal Tits and Fieldfare at Black Rock Gorge and numerous waders, particularly Wigeon, on Loch Fleet and at other coastal locations. Inland, Buzzards, Kestrels and Hoodie Crows were seen frequently along with the occasional Raven. In Strath Conon a young Golden Eagle was watched as it circled over the opposite hillside whilst at Littleferry a Peregrine was seen stooping at a Kestrel.

The hills resounded to the roar of stags. Numerous groups of Red Deer were seen varying in size from one stag supervising 34 hinds to another stag with only 3 hinds. Other stags in the vicinity were waiting their chance to steal hinds. A head-to-head tussle between two stags appeared to be ritualistic rather than a serious conflict. Seals were frequently seen off both east and west coasts. Groups of 40-60 Common Seals were basking on sandbanks in Cromarty and Dornoch Firths and others were boisterously fishing in the tidal race of Loch Fleet. Porpoises were seen in Gruinard Bay.

Near Balintore, Oyster plant (*Mertensia maritima*) was growing on the upper shoreline and in the nearby grass Dove's-foot Cranesbill (*Geranium molle*) was still in flower. Numerous fungi were encountered, those most readily identified including a Puffball (*Lycoperdum molle*), Shaggy Ink Caps (*Coprinus cornatus*), Fly Agaric (*Amanita muscaria*) and the scarlet coloured *Hygrophorus puniceus*.

Everywhere the autumn colours of trees and moorland were magnificent.

W.D. Gill

SOCIETY TELESCOPE

This telescope along with a supporting tripod and a car window mount can be borrowed by members. Please contact

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EDITORIAL

The uninitiated often ask - what is the Edinburgh Natural History Society for?

Members are people who appreciate and get pleasure from the countryside and who like to share it with the resident wildlife.

Many members take a special interest in certain branches of natural history by way of a hobby, whilst others are content to take a more general interest.

There are many other associations for those who wish to become involved in a subject more thoroughly, e.g. the Botanical Society of Edinburgh for the botanically minded, the Scottish Ornithologists' Club for bird study, the Edinburgh Geological Society for students of land-form and rocks, the British Mycological Society for fungus enthusiasts, and the Scottish Wildlife Trust for the conservation conscious. There are also many walking clubs for those who prefer to visit the country without stopping to stare too often.

Participation in ENHS activity offers a means of enjoying the many different aspects of the countryside and at the same time enjoying the company of like-minded people and of sharing observation and experience.

We hope that this Journal extends this theme of sharing information whilst at the same time giving pleasure.

Sheila Gray

On the death of Sheila Gray in January 1988, the Society lost a much valued friend. Sheila brought the same warmth and enthusiasm to all that she did, on outdoor meetings over many years, as a member of the excursion committee and as the provider of coffee at winter slide shows. She devoted much time to helping others and few knew it because she went about it in her own quiet way. Wherever Sheila was there was warmth and sunshine and that indefinable thing we call grace; we shall long remember her.

Dr. P.M Hobson

Dr. Peggie Hobson died in December 1988 after a short period of illness. She will be missed by her friends in the Society, not least for her advice and opinion as an elected member of Council.

Dr. Hobson's academic career was spent on lecturing and researching in geography and this was always coupled with a keen interest in botany. In addition to her work at Cambridge and more recently at University College London, she spent long periods in Scotland, both in Perthshire and at St. Andrews University and also in South Africa where she was able to travel extensively.

On her retirement in 1981 Peggie came to live in Edinburgh and made the Natural History Society one of her varied interests.

Murray Lunan

Murray Lunan, OBE, MA, BSc, AICTA, who had been Vice President of the Edinburgh Natural History Society from 1984-86 died very suddenly in Edinburgh on 8th December 1988. He joined the Society in 1979 bringing with him a great interest in natural history and a vast experience of life in different parts of the world.

He had been Director of Agriculture in Tanganyika at the time of its Independence and was then appointed Advisor in the Agricultural Ministry until he retired in 1962. After that he joined the Food and Agriculture Organisation of the United Nations and served for varying periods in Brazil, Rome and Afghanistan until coming to live in Edinburgh in 1976.

He will be remembered affectionately by all those who knew him for his kindness, enthusiasm and sound knowledge and the Society extends its sincere sympathy to nis wife Nora and to his family in their loss.

Mr. E.C. Pelham-Clinton

It is with profound regret that we have learned of the sudden death of Edward Charles Pelham-Clinton, at the age of 68, on 25 December 1988.

Ted, as he was widely known, was one of Britain's most eminent entomologists. He specialised in many groups of insects while maintaining a life-long interest in lepidoptera. He had numerous taxonomic publications to his credit. As a committed and widely-travelled field worker throughout Britain, he added a number of new species to the British list and had the distinction of having several newly described species named after him.

In 1960 he was appointed to take charge of the insect collection in the Royal Scottish Museum. Later he became Deputy Keeper of Natural History till he retired to Devon in 1981, though frequently returning to work voluntarily on the museum's collection of exotic butterflies.

He joined the Edinburgh Natural History Society in 1966 and was soon appointed to Council becoming Winter Programme Secretary in 1969 and a Vice-President in 1971. In addition he gave lectures, led several excursions and contributed articles to our News-Letter (now Journal) on the Lepidoptera of Corstorphine Hill and the Queen's Park. Ted actively encouraged amateurs to contribute to biological recording and strengthened the links between our Society and the Royal Scottish Museum, not least with visits 'behind the scenes' to the Entomology Department where he was delighted to show us drawers full of colourful butterflies.

We remember with particular pleasure his innovative moth hunting outings at night with a mercury vapour lamp set on a large white sheet on the woodland floor. There was great excitement as a bewildering variety of moths arrived, were boxed and passed round for examination before being later released.

His infectious enthusiasm, professionalism and consideration endured him to those fortunate to have known him.

Dr. Mabel Thomson

After a short illness, the result of a fall at home, Dr. Mabel Thomson died in hospital on Saturday, 20 November 1988. She was one of our long standing members and served on the Council of the Edinburgh Natural History Society from 1967 till 1970. The daughter of a minister, she was born in Ireland on 9 October 1896. She graduated at Edinburgh University in 1921 specialising in Public Health.

A keen amateur field botanist, Mabel was a regular attender at all Society activities, especially at field excursions when she would usually be found with fellow enthusiasts identifying and recording wild flowers. She was highly committed to animal welfare and participated in adoption schemes at Edinburgh Zoo and donkey sanctuaries. Mabel enjoyed walking and appreciated our Scottish countryside and country ways.

Sadly, in her later years, Mabel was unable to take part in the activities of the Society. Mabel held all forms of life with a sincere reverence and love. It was a privilege to have known her.

THE GUNN PHOTOGRAPHIC COMPETITION 1988

This is the sixth year of this competition. The format of the competition was changed with the introduction of separate sections for flora, fauna, landscape and humour. The number of entries increased substantially to forty-four. The judge was Mr. Sidney Clarke.

Winning entries were:

Flora	Jackie Muscott	'Hedge Bindweed' (*Calystegia sepium*)
Fauna	Jackie Muscott	'Spider and Rosebay Seeds on Web'
Landscape	John Campbell	'Loch Voil in Autumn'
Humour	Donald Manson	'NATS at Forres - Where?'

These photographs are reproduced on pages 7 and 8.

Mrs. E. Farquharson showed slides taken on a recent trip to Greece where she went with the British Mycological Society. Walking on the Olympus Range she saw conifers which acted as host to mistletoe, primroses of various colours and many anemones. In the very moist climate the Rusty-back fern flourished. Excellent slides of these were shown, as well as of the early spring flowers below the snow line in the Pindus Mountains.

S. Litteljohn

OCTOBER: Following the Annual General Meeting, Mr W.D. Gill spoke on a seven week visit to Australia taken in March and April this year. After arriving in Perth a tour of the south-west corner of Australia down to Albany was undertaken. He described the importance of hardwood forestry in the economy of that area and showed slides of Karri (*Eucalyptus diversicolor*) and Jarrah (*E. marginata*) trees which predominate in this area. Conditions were very dry at the time of the visit and large flocks of Merino sheep were having to be hand fed daily. Where land had been cleared for farming, piles of cut timber lay where they had been placed 40 years ago showing how the dry climate and the hard wood combine to cause a very slow degradation process.

Following a flight to Sydney a camper vehicle was hired and driven north to Cairns. The route taken was mostly away from the coast and often along the Great Dividing Range. National parks visited included Cania, Zamia and Cape Hillsborough. Photographs were shown of numerous plants, lizards, goannas, butterflies and birds, the latter including Kookaburra, Butcher bird, Pelican, Brolgas, Spur Winged Plover, Bush Stone Curlew, Buzzard, Black Kite, Wedge-tailed Eagle and flocks of Galahs.

Heavy rain at Easter led to widespread flooding in southern Queensland and all roads were closed for a time - even Brisbane was isolated. Further north, conditions remained dry and graziers were suffering the longest drought since white settlement began. Some had transported stock to the central Highlands of Queensland in order to utilise the common grazing available on the drove-road verges. Termite mounds were prominent in these drier regions. While travelling east towards the coast near Cairns we were aware of a marked rainfall gradient as we passed from an area of drought conditions to one of tropical rainforest. The Atherton tableland provided sightings of a wide range of birds.

The next part of the holiday was in central Australia, based on Alice Springs. Ayers Rock and the Olgas were visited and Lake Amadeus was seen full of water, its usual state being a dry salt pan. The Easter rain had led to a surge of new growth in the desert bush. The Sturt Pea and Sturts Desert Rose (*Gosspylia stuartium*) were seen in flower and the Desert Oak (*Casuarina decaisneana*) dominated the bush flora, where it occurred.

Melbourne and the limestone cliff scenery of the Victoria coast were the last area visited and here the Glenelg National Park provided yet another vista of Australia.

GUNN PHOTOGRAPHIC COMPETITION 1988

FLORA: Calystegia sepium – Bindweed by J.Muscott

FAUNA: Spider and Rosebay seeds on web by J.Muscott

GUNN PHOTOGRAPHIC COMPETITION 1988

LANDSCAPE: Autumn – Loch Voil by J.Campbell

HUMOUR: NATS at Forres – Where? by D.Manson

NOVEMBER: Mr. Ken Runcie, formerly a lecturer in the Edinburgh School of Agriculture and an expert on the breeding and feeding of dairy cattle, gave a very interesting lecture on the relationship between farming and conservation. He reminded us that the splendid landscape of our country was in great part created by the "improvers" of the 18th and 19th centuries, often at great cost to themselves. Its conservation must also have a cost which could no longer fall entirely on the farming community. He also explained how the Forestry, Farming and Wildlife Advisory Groups functioned and illustrated his talk with many interesting slides.

DECEMBER: Mr. Michael Philips who currently lectures for the Extra Mural Department at the University of Edinburgh, gave a fascinating account of a visit to Iceland. He showed many interesting and beautiful slides of the flowers, birds and landscapes. He made the point that Iceland often had only one member of a bird species represented so that recognition was much facilitated. Alpine/Arctic species of plants and flowers which are found in sparse numbers in Scotland were plentiful in Iceland. Although they encountered rain and mist the slides of the northern area were bathed in sunshine and members of the party soon had fine tanned complexions. The small towns of the island were most neat and colourful.

V. McFarland

EDINBURGH'S HOGWEED HUNTDOWN - 1988

The last Edinburgh survey of Giant Hogweed (*Heracleum mantegazzianum*) took place in 1982. The findings indicated that the distribution of the weed, primarily along the watercourses in the City, was very similar to that identified in a survey eight years earlier. There were a few large centres of population expansion but not such as to indicate an explosion of invasion.

Because of public fears about the weed and an indication that its spread was beginning to affect the amenity of various river valleys and open spaces in the City, it was necessary to repeat the survey in 1988.

Giant Hogweed is truly an awesome plant which few can fail to notice. In isolation it is magnificent, with a flowering stem reaching at times over 3.5 m. in height, topped by great umbels of over 50 cm. in diameter, and carrying enormous leaves a metre or more in length.

The plant flowers only once, generally in the third or fourth year, after which it dies but, in producing over 5,000 seeds from each flowering head, its fitness for survival is unquestioned.

As an addition to our native flora it is a plant to admire - but one also to treat with great respect.

It is an introduction which first appeared in this country in about 1880 when it was imported as a curiosity for the Victorian garden from the Caucasus Mountains, between the Black Sea and the Caspian. While under strict control in a large garden setting, it is a plant to be appreciated but with the risk attached to all non-native introductions, this one escaped and found the British climate an attractive one in which to thrive.

Not only is its invasive nature a problem, since it can destroy riverside habitats, its favourite haunt, by replacing native plants, but it also has a very unpleasant defensive characteristic in that its sap contains a strong poison which makes the human skin sensitive to sunlight. The results are a burning and blistering of the skin which can be particularly serious if children are affected.

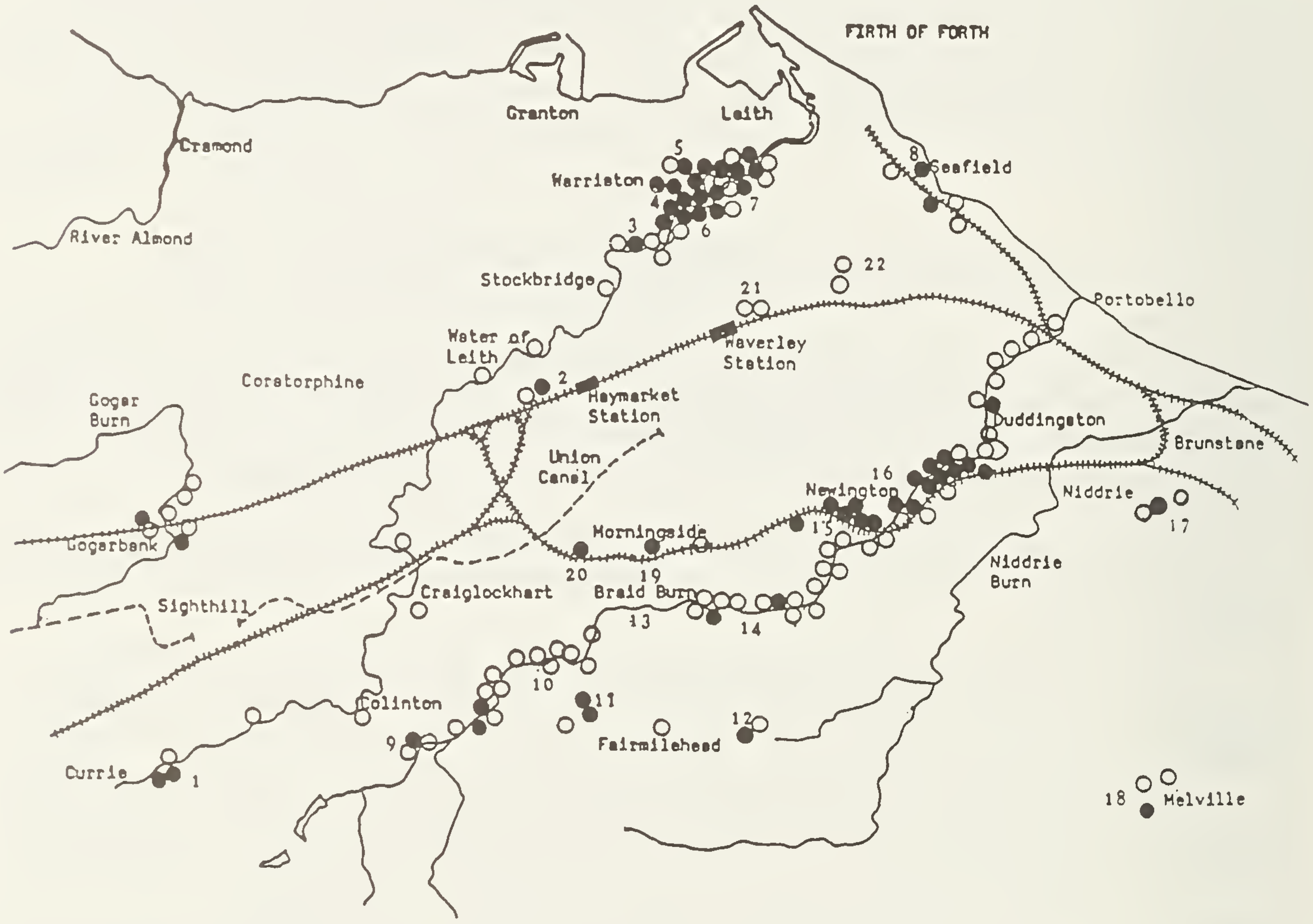
The defensive mechanism is no doubt one that evolved to protect the plant from insect pests and grazing animals, rather than humans. Curiously cattle and pigs can graze it with no ill effects but the literature makes no reference to sheep or goats, the most likely animals to graze it in its native home.

The updated survey was undertaken by the Lothian Urban Wildlife Group and to assist it a publicity campaign was launched in the summer to encourage members of the public to report locations of the plant.

A "Hogweed Hotline" was established with a remarkable response: a total of 254 people calling in to report the plant in a matter of days.

A comparison of the surveys undertaken since 1974 has indicated that the plant has steadily increased its population size. The present status of the plant is shown in the diagram. This shows that the Braid Burn is becoming a ribbon of Giant Hogweed, with an increasing annual seed production which is potentially and actually being dispersed to waste ground, woodlands, and gardens adjoining the watercourse.

Distribution of Giant Hogweed in Edinburgh (July 1988)



KEY: River ∼∼∼

Railway ┼┼┼┼┼┼

Canal ⊢ — — — ⊣

Major colonies ●

Individual plants or small colonies ○

1. Kinleith Industrial Estate
2. Haymarket
3. Inverleith
4. Warriston Cemetery
5. Disused railway line
6. Powderhall Stadium
7. Bonnington.
8. Seafield reclaimed land
9. Dreghorn
10. Colinton Mains Park
11. Fairmilehead Park
12. Mortonhall
13. Hermitage of Braid
14. Blackford Glen Road
15. Newington Cemetery
16. Duddingston Road West
17. Newcraighall Road
18. Gilmerton Road
19. Astley Ainslie Hospital
20. Royal Edinburgh Hospital
21. Calton Road
22. Lochend Loch

The Water of Leith is still remarkably free of the problem except for a major sweeping explosion between Inverleith and Bonnington. There are smaller centres further upstream which could potentially develop although action now could remove this risk. However, it is in the Warriston area that the threat and ecological impact of the weed can be seen in full drama. Such is the problem that it is now difficult to conceive how it might be tamed without many years of concentrated effort.

Realistically, what should be done about this and how much of an ecological problem is it in Edinburgh?

Although Giant Hogweed has its health risk there is every indication that people avoid getting too close to it. Just as we learn at an early stage that nettles should be given a miss, the same basic education is already working through word of mouth, schools and publicity, and so we tend to avoid getting entangled with it. As a consequence, to many people its greatest threat is to our amenity since it reduces access for anglers and walkers as a consequence of the unpleasant side of its nature.

The weed, or rather its flowers, is literally an enormous attraction for insects. It might also be argued that since the weed tends to exclude public access it leaves areas free of disturbance which in a city environment can be a distinct advantage for urban wildlife. Undoubtedly, we do not know enough of the flora of the watercourses that pass through the city to appreciate what actual damage it is doing. It clearly shades out and competes with the native flora but provided this is not an extensive problem some might consider the invader as actually adding some interest, or habitat diversity.

Giant Hogweed has now achieved a strong foothold in the city. Every effort should be made to prevent it establishing beyond its major centres but how realistic it might be to eradicate the weed is another matter. Action is needed but this will require an assessment of the practical problems and the public authorities may be unable to meet the full demands of an eradication programme. It is therefore most likely that the plant is now here to stay.

Dr J.C. Sheldon
Regional Ecologist

MOTHS AT THE KITCHEN WINDOW

A lack of curtains and a predilection for late nights seem to be a good start for an interest in moths. I suspect that an untidy garden and a few trees growing close to the house are helpful factors which contribute to the number and variety which present themselves at the kitchen window.

At the moth-trapping evening at Almondell last year we found the Antler Moth (*Cerapteryx graminis*) and the Beautiful Golden Y (*Autographa pulchrina*). We also found the Common White Wave (*Cabera pusaria*) and two yellow moths, the Brimstone (*Opisthograptis luteolata*) and the Yellow Shell (*Camptogramma bilineata*). On returning home I was delighted to find waiting for me at the kitchen window the Large Emerald (*Geometra papilionaria*). It seemed ironic to have travelled several miles and spent some hours in the cold air trying to identify interesting but, by comparison with the Large Emerald, rather small moths and then to return to a warm kitchen and find such a spectacular green specimen waiting on the other side of the window. My good luck did not finish there. The following day (or rather the same day since the first sighting had been after midnight) whilst in the company of two other members of the Society at Craigie Wood, near Kirkliston, I had the good fortune to come upon a specimen of the Light Emerald (*Campaea margaritata*). This pale-green moth has two distinct dual-colour lines, white and green across the forewings. The edges of the wings have a dark border with white fringes. This compares with the more delicate variation in colour of the Large Emerald which sparkles with its white markings.

Each of these Emerald moths has prominent dark eyes. The Swallowtailed moth (*Ourapteryx sambucaria*) is less green and has two single dark lines across the forewings. It has distinctive orange-brown marks towards the ends of the Swallowtails

The Large Yellow Underwings (*Noctua pronuba*) present themselves in the daytime when disturbed by the annual cutting of the beech hedge. They do not fly far from the hedge but hide among the rose bushes until the operation is over. These moths are also to be seen at night-time near outside lights and lighted windows. Smaller yellow moths which come are the Brimstone, the Yellow Shell and the Barred Yellow (*Cidaria fulvata*). The Brimstones seem to be fairly prolific and are easily identified by the brown markings along the forewing edge. The Barred Yellow has a darker contrasting band across the middle of the forewing. The Yellow Shell, although having distinctive markings, is more uniformly yellow than the other two. A larger moth with yellow markings was the Magpie (*Abraxas grossulariata*). This moth is a picturesque combination of white background with a black and yellow pattern.

Another colourful, but more slimline moth, was the Angle Shades (*Phlogophora meticulosa*). This moth has beautiful half-eye markings midway along the edge of the forewing. One moth was interesting more for its shape than for its colour. That was the aptly named Snout (*Hypena proboscidalis*). Less spectacular moths such as the Silver Y (*Autographa gamma*), the Willow Beauty (*Peribatodes rhomboidaria*) and the common Dark Arches (*Apamea monoglypha*) also came to see who was doing the washing-up so late at night. The Double Square-spot (*Xestia triangulum*) proved difficult to identify with my limited knowledge and range of books. I had to resort to careful notetaking, a sketch and a borrowed book.

Interesting additions to my observations during the past year have been the Spinach (*Eulithis mellinata*) and the Small Magpie (*Eurrhypara hortulata*). The number of species identified on this site is now thirty-eight over the last two years. One late night/early morning it seemed particularly easy to catch the moths, and eight were caught in quick succession. Three of them were ones which I had found often and were released immediately. Each of the five remaining moths defied my attempts at identification - such is the frustration of the interest.

All the moths were caught using an empty rectangular margarine carton with a clear transparent lid or with a petri dish. A normal reading magnifying glass (2 x and 8 x magnification) was used to look through the transparent top. This gives a wider field of view than a hand lens. The moths were all released promptly after identification.

E.McA. Smith

References:

Insects of Britain and Northern Europe, M. Chinnery.
The Oxford Book of Insects.
Butterflies and Moths in Britain and Europe, D. Carter.
Moths of the British Isles, B. Skinner.
Moth Collection at the Royal Museum of Scotland, Edinburgh.

Also (in ENHS Library):

Moths and Butterflies of Great Britain and N. Ireland, J. Heath and A. Maitland Emmet.

FUNGUS COURSE AT KINDROGAN - 3-9 September 1988

As a beginner not long introduced to the joys of fungi, I gathered up my courage and booked for a study week at Kindrogan Field Centre, Kirkmichael, Perthshire. I need not have worried, as I thoroughly enjoyed myself and would quite happily have stayed there longer.

My thanks go to the members of the ENHS who encouraged me to apply for financial assistance from the Sime Fund. I subsequently received a substantial grant towards the cost of the course.

There were nine of us on the course, including one other ENHS member, plus the tutor, Dr. Alan Silverside. There was a wide range of experience (and lack of it) and the big attraction for most of the others (all English) was the chance to see Highland specialities such as *Rozites caperatus*, which we found in abundance at Inverey, but which is found in very few other sites.

Most or all of each day was spent collecting, and the evenings commenced with a short talk by Dr. Silverside on the finds of the day, which was followed usually by laboratory work. We also received a lecture on microscopic characteristics and a detailed slide show on the development/classification of fungi.

Day 1

This was spent in the environs of Kindrogan, where we found more than 125 species, most of which appeared to be under 2 inches in height! Most interesting species included *Spathularia flava*, which is a Highland species in the *Geoglossum* (Earth Tongue) group.

Day 2

This was spent at Methven Wood at the request of the NCC, who own the wood and are compiling species lists. However, it did not prove to have either a particularly abundant or interesting fungus flora, and many of the species which were present were in association with beech, which unfortunately the NCC appears to be removing as it is not a native species in that area. The most unusual species we did find were possibly, *Lactarius glaucescens*; *Pholiota flammans*, another Highland species; and *Mutinus caninus* - the Dog Stinkhorn - which, conversely, is scarce in Scotland but more widespread further south.

Day 3

The day dawned wet and got wetter, so we opted to go to the Birks of Aberfeldy, which is fairly sheltered and has lovely waterfalls whatever the weather. Here we found quite a good variety and quantity of fungi, especially Boletes, Russulas and Lactarius. The day got off to a good start with the discovery of *Boletus citrinovirens* near the car park. This was recognised as a distinct species for the first time from the same area by Dr. Roy Watling.

Day 4

Having acquired permission to enter the Nature Reserve, we decided to spend the day at Tentsmuir in the East Neuk of Fife. It is a particularly interesting area funguswise, with many fungi specific to sand-dunes/slacks, some of which (especially in the Cortinarius group) have not even been named, never mind entered into the popular books. (I learned at Kindrogan that the study of fungi is facilitated if you have access to a large botanical library and knowledge of French and German, as a large number of even British species do not appear in the British books.)

The best finds of the day included *Peziza ammophila* (which appears as a hole in the sand); a "bird's nest" fungus - *Cyathus olla*; *Phallus hadrianus* (our third Stinkhorn of the week after *Phallus impudicus* and *Mutinus caninus*); *Calocera furcata* (in the plantation), a very rarely recorded species, perhaps confined to eastern Scotland; and *Mycena pura* var. *lutea*. The last named species is a very attractive large Mycena, specific to dune-slacks, with lilac stipe and yellow cap.

Day 5

This was our final day and, owing to the very inclement weather in the morning, we had to abandon the idea of going up the Cairnwell to look for high altitude species one of which, *Omphalina hudsonii*, was found at Linn of Dee, some 1000 feet lower than it should have been. We went instead to the Scots Pine forest at Inverey and to Linn of Dee. Inverey in its present form is a plantation, but Scots Pine have probably grown on the same site for centuries and, consequently, a substantial fungal flora occurs. It is another area, like Tentsmuir, which has many specialised species, e.g. the *Rozites caperatus* already mentioned.

Well, that is a brief summary of a very busy and enjoyable week. The result is that I think I am destined every autumn to have a living-room full of bits of disintegrating fungus (and maggots).

Margaret E. Mitchell

A POND SKATER SURVEY IN MID- AND WEST LOTHIAN

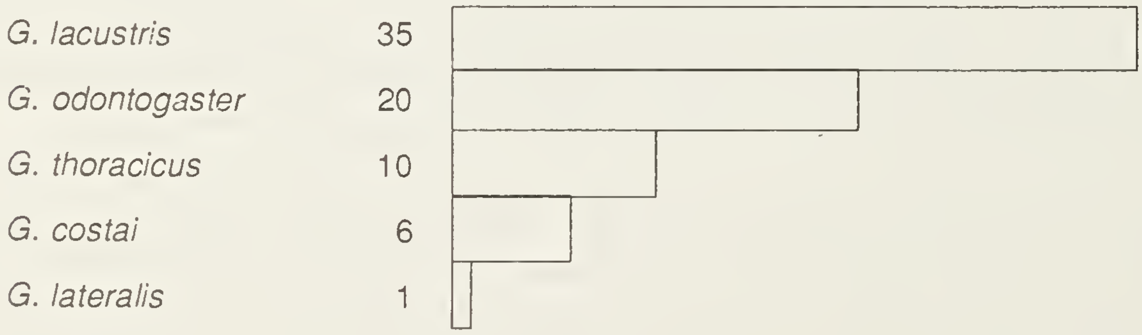
Pond Skaters, properly the Gerridae, are members of the order of Hemiptera, or True Bugs, i.e. insects having piercing mouth parts suitable for sucking juices. They are adapted to a life supported on the surface tension film to be found on water. Over a period of seven collecting seasons, 1977-1983, an effort was made to visit as many waters as possible in Mid- and West Lothian (Vice-counties 83 and 84) in an attempt to determine the species of Pond Skaters present. The results are tabulated, showing *inter alia* the National Grid Reference, altitude in metres and the species present. Some sites were visited more than once, but not all visits are recorded. Where I have found it necessary to create a name, this is indicated by the use of inverted commas. Two records outside the named period, one in each Vice-county, have been added, but there is no claim that every possible water has been examined.

Five species were identified: *Gerris costai, G. lacustris, G. lateralis, G. odontogaster* and *G. thoracicus*. A total of 62 waters were visited with positive results, 27 in Midlothian and 35 in West Lothian. The diagram illustrates the relative frequency of the species, and my results show a close relationship with those recorded by E. Gillespie in Water-bugs of the Lothians, ENHS Journal 1983, pp. 22-24.

Collecting was most successful on sunny days, especially when the wind-speed was not in excess of B.S.2, i.e. 4-7 m.p.h. Results on dull or windy days could be enhanced by sweeping the waterside herbage. The earliest collecting date was 23 April and the latest was 1 November. Some of the waters listed have since disappeared.

I owe thanks to the many landowners who readily allowed me access to their properties.

Diagram illustrating the relative frequency of the five species.



Midlothian (Vice-county 83)

Site	N.G. ref.	Altitude (m)	Date	Species
Bavelaw Mill Farm	36/148631	265	13. 9.79	*G. costai*
Bavelaw Marsh	36/162636	244	29. 4.80	*G. odontogaster*
Bawsinch	36/283723	60	19. 6.79	*G. lacustris*
Calder House Loch	36/070673	100	2.10.80	*G. odontogaster*
Cobbinshaw, old fish pond	36/025591	259	11. 9.80	*G. odontogaster*
Dalmahoy Pond	36/147688	100	28. 8.80	*G. lacustris* *G. odontogaster* *G. thoracicus*
Edgelaw Reservoir	36/304579	198	2. 6.83	*G. lacustris*
Gladhouse, Black Burn	36/311543	274	2. 5.80	*G. lacustris*
Hare Moss	36/202570	275	26. 5.83	*G. costai*
Harperrig Reservoir (west section)	36/089604	275	22. 5.80	*G. odontogaster* *G. thoracicus*
Heriot-Watt Univ., pond	36/177697	91	20. 9.79	*G. lacustris*
Heriot-Watt Univ., fire-dam	36/175693	91	20. 9.79	*G. lacustris*
Lennie Quarry	36/167741	60	20. 9.79	*G. lacustris*
Malleny Rifle Range	36/195656	274	8. 5.80	*G. thoracicus*
'Murieston' Quarry	36/051640	165	4. 8.83	*G. lacustris*
Raw Cottages	36/096683	110	2.10.80	*G. lacustris* *G. odontogaster*
Red Moss	36/163638	260	5. 8.80	*G. costai*
Riccarton Mains Road	36/183684	120	2. 5.80	*G. odontogaster*
Riccarton Mains Road	36/183684	120	29. 7.82	*G. lateralis* *G. thoracicus*
Selm Muir Forest	36/087651	198	16. 9.82	*G. lacustris* *G. odontogaster*
Shaft holes	36/022661	120	28. 8.80	*G. thoracicus*
Straiton Pond	36/281668	137	28. 4.80	*G. lacustris*
Threipmuir Reservoir	36/164635	245	29. 4.80	*G. odontogaster*
Union Canal	36/177706	76	6. 6.79	*G. lacustris*
Westfield Farm Pond	36/046638	175	4. 8.83	*G. lacustris*
Calderwood Country Park	36/076673	110	17. 5.84	*G. lacustris*
Calderwood Country Park	36/076674	110	17. 5.84	*G. lacustris*

West Lothian (Vice-county 84)

Site	N.G. ref.	Altitude (m)	Date	Species
Airngarth Pond	36/002791	155	3. 6.82	*G. lacustris*
Airngarth Quarry	36/003793	155	3. 6.82	*G. lacustris*
Auldcathie Pond	36/081761	75	23. 4.81	*G. costai* *G. odontogaster*
Ballencrieff Reservoir	26/980710	228	4. 6.81	*G. lacustris*
Bangour Reservoir	36/014716	213	30. 8.79	*G. lacustris*
Barbauchlaw Burn	26/944716	110	15. 9.83	*G. odontogaster*
Beecraigs Reservoir	36/012742	152	30. 8.79	*G. thoracicus*
Binny Reservoir	36/039725	170	10. 6.82	*G. lacustris* *G. odontogaster* *G. thoracicus*

West Lothian (Vice-county 84) (cont.)

Site	N.G. ref.	Altitude (m)	Date	Species
Carriden House Pond	36/023805	55	27. 5.82	*G. thoracicus*
Craigiehall Pond	36/175756	45	17. 9.81	*G. lacustris*
'Craigrigg' Works Pond	26/933708	140	10. 6.82	*G. lacustris*
Craigton Quarry	36/075768	75	19. 8.82	*G. lacustris*
Dalmeny, 'Pond No. 1'	36/142769	45	13. 8.81	*G. lacustris*
Dalmeny, 'Pond No. 1'	36/142769	45	7. 5.81	*G. odontogaster*
Dalmeny, 'Pond No. 2'	36/141769	45	13. 8.81	*G. lacustris*
Dalmeny, 'Pond No. 2'	36/141769	45	7. 5.81	*G. odontogaster*
Fawnspark Pond	36/066766	75	19. 8.82	*G. lacustris*
Hopetoun House, N. Deer Park	36/081793	15	15. 6.79	*G. thoracicus*
Hopetoun House, Round Pond	36/086790	30	28. 5.82	*G. thoracicus*
Humbie Quarry	36/109756	76	27. 9.79	*G. lacustris*
Humbie Reservoir	36/106754	60	27. 9.79	*G. lacustris*
Kirkliston Reservoir	36/111999	135	13.8.81	*G. lacustris*
Newliston House	36/110737	45	13.9.79	*G. odontogaster*
'Old Clapperton' Pond	36/084687	100	16.9.82	*G. odontogaster*
Pumpherston 'Works' Pond	36/071692	130	20.8.81	*G. lacustris* *G. odontogaster*
'Railway Quarry' Pond	36/067768	75	19.8.82	*G. lacustris*
Tailend Moss	36/009679	145	22.7.82	*G. odontogaster*
Tailend Moss	36/003677	145	22.7.82	*G. odontogaster*
Tailend Moss	36/004677	145	22.7.82	*G. costai*
Torbane Pond	26/960669	150	15.9.83	*G. odontogaster*
Totleywells Pond	36/097760	75	17.9.81	*G. lacustris*
Union Canal	36/075770	75	23.4.81	*G. lacustris*
Union Canal	36/091762	75	23.4.81	*G. lacustris*
Winchburgh Quarry	36/089753	76	1.11.79	*G. lacustris*
Polkemmet Country Park	26/927652	190	30.8.85	*G. costai*

C.P. Rawcliffe

A MYRIAPOD AND ISOPOD SURVEY IN LOTHIAN

A brief interim report on the progress of the above may not come amiss, insofar as this has had Society support.

By now every 10 km. square has been visited and collecting done. Records in all branches of nature study are now mapped on this basis, so it seemed worthwhile to extend my researches in this fashion.

Results to date are summarised in the following table. Figures in brackets are from the ENHS Journal 1986.

	Vice-county 82 East Lothian	Vice-county 83 Midlothian	Vice-county 84 West Lothian
Chilopoda (Centipedes)	(1) 8	(9) 17	(9) 10
Diplopoda (Millipedes)	(11) 12	(15) 23	(10) 14
Isopoda (Woodlice)	(6) 6	(5) 9	(8) 8
Totals	*(18) 26*	*(29) 49*	*(27) 32*

As the figures represent numbers of different species found it will be seen that progress has been made, particularly in Midlothian (Vice-county 83).

Firsts, in themselves, are of limited value, but they do highlight the work, so the following may be of interest:

Chilopoda			
Lithobius micropodus	1st for Britain	-	Royal Botanic Garden, Edinburgh
Lamyctes africanus	1st for Britain	-	Royal Botanic Garden, Edinburgh
Cryptops parisi	1st for Scotland	-	Edinburgh
Diplopoda			
Cylindroiulus salicivorus	1st for Britain	-	Royal Botanic Garden, Edinburgh

C.P. Rawcliffe

THE GARDEN OF EDEN

Looking down from a tiny eight-seater plane, a few hundred feet above the Indian Ocean, gives one a seabird's eye view of the seemingly trackless expanse of coral and sea that encircles the Seychelles. Sixty miles north of Mahé, the largest island of the group (some 17 by 4 miles in size), Bird Island appears - a triangular speck on the ocean. As we draw nearer we see a grassy airstrip running through green plantations and wonderful white surrounding sands holding back green seas and white corals. The tiny settlement caters for up to 50 human visitors and the island has a breeding population of well over one million sea-birds.

The heat hits us as we step off the plane but it does not take us long to walk to our unexpectedly palatial bamboo-hut 'lodge'. Lying at one side of our front entrance is Esmeralda, the 150 year-old tortoise, and at the other side is a second, equally gigantic. We wonder if the management is trying to tell us something! These tortoises (there are only two on the island) are even bigger than the Galapagos ones.

Everything is entrancingly strange but curiously 'normal'. We sit on our chairs on the verandah looking over the grassy sward with scattered Coconut Palms and Casuarina Pines and throw out food for the birds. There are dozens of scarlet 'cardinals' or Madagascar Fodies, Indian Hill Mynahs and the beautiful little Barred Ground Doves - all introduced. These are elbowed out by flocks of Turnstones and Sanderlings apparently quite at home among the scattered trees. Small parties of Curlew Sandpipers feed between the lodges and Whimbrel and Grey Plover roam along the landing-strip which runs most of the length of the island. More exotic species (to us) such as the Greater Sandplover (large, pale Ringed Plover type) and the Pacific Golden Plover parade in front of our deck-chairs. The excited chatter of Fairy Terns just above our heads draws attention to two pairs with an egg and a chick each balanced precariously on one of the 1½ inch wide battens supporting the lodge roof. Fairy Terns are exquisite birds, pure white with dark eyes and dark bill tinted blue at the base. In complete contrast the Noddy Terns are dark brown with pale foreheads. The large Brown Noddies seem to be everywhere, sitting on their single egg or chick some three feet up in the nearby palms or idling in sun-bathing groups on the paths. After a gale we had dozens of blown-down chicks escorted by their parents wandering around the settlement. The rather similar Black Noddies are only half their size and do not breed on the island, coming in during the evening to roost on the taller trees like huge flocks of starlings.

A distant murmur in the far-off sky draws our attention to numbers of long-winged wheeling terns miles out over the sea. The Sooties are returning to their traditional nesting grounds. 'They are early this year but there aren't many yet'. At dusk we watch them circling ever nearer getting lower and lower in one vast whirling screaming mass as they come in to land. The excitement of their first arrival is intense and the noise is indescribable. We estimate 100,000 birds and appreciate their alternative name of Wideawakes. 600,000 pairs nested in 1987.

Praslin, the second largest island, is a different experience. The long stretches of hot sand and warm sea are the same but the interior is of ancient granite instead of sand as on Bird Island. The conservation highlight is the Vallée de Mai which contains the last remaining natural forest on the island. There are several species of endemic Screw-pines (*Pandanus* spp.), Palms, and Tufted Sedges in the valley and this is the home of the Coco-de-mer. For centuries the origin of this huge 'double-coconut' was unknown and on the odd occasion when one drifted the 1000 miles to Africa, India or Malaya (unlike ordinary coconuts they rot quickly in sea-water) it was regarded as a great treasure exclusively for the use of the rulers of the land. The coconut bears a striking resemblance to a certain part of the female anatomy so its aphrodisiacal properties were obvious. Curiously the long curved flower spike of the male tree resembles the analogous part of the male anatomy so, when the islands were colonised, the legends arose and no less an authority than General Gordon of Khartoum declared that Praslin was the original Garden of Eden and that the Coco-de-mer was the forbidden fruit!

In and around the Vallée de Mai live the few remaining fruit-eating Black Parrots once numerous and shot in thousands as pests. Because so little of the indigenous vegetation remains there are several of these minute isolated populations of endemic bird species - the Magpie Robin on Fregate, the Bush Warbler on tiny Cousin Island, the Seychelles Fody on both islands and the Paradise Flycatcher on La Digne. A few of the endemic birds are more common. Sunbirds are numerous among the wide variety of flowering and fruiting bushes while Cave Swiftlets breed in the hills. The two dove species and the Seychelles Kestrel are not too uncommon and the only endemic mammal, the Fruit Bat, can be seen in many areas over the trees.

As with all oceanic islands many forms of life are unique. There are 81 plant species peculiar to the Seychelles archipelago. One of these, Wright's Gardenia or *Bois citron*, is now restricted to Aride and only flowers after a spell of rain. This is acknowledged as the most beautiful flowering of the indigenous bushes so we feel privileged to see the lovely scented white and magenta flowers which later develop into lemon shaped fruits. Aride is a bird island with Fairy, Sooty and both species of Noddy Terns all breeding. There are thousands of Tropic Birds sailing and swooping, beautiful black and white birds with very long white tail streamers. A few Red-tailed Tropic Birds have recently colonised but we 'tourists' are kept well away! Overhead sail the spectacular Frigate Birds all black with white belly, six foot long narrow wings and the piratical habits and wingsmanship of the skuas.

Almost underfoot is a different scene - two species of Skink (lizards), Ghost and Hermit Crabs and 10 inch long Millipedes. The shore has its own appeal - long hot sandy beaches with magnificent swimming and a new venture for us, snorkelling, opening up another world of brightly coloured and fantastically shaped fish and coral. Two weeks flash past - what price Aberlady now?

E.M. Smith and R.W.J. Smith

THE ISLAND OF COLONSAY

The west coast of Scotland and especially the islands, have a particular fascination for many people, a fascination in many cases born of fable, legend and history. Through my early years I built up a picture of the area in my mind from books and hearsay and, more recently, visits have confirmed much of what I had imagined. When the opportunity came in 1987 to make my first, brief, working visit to the island of Colonsay, the trip was therefore anticipated with considerable interest and excitement. Travelling by boat, even briefly, plays a part in this excitement because in childhood I only saw the sea once a year, something which left me with a longing for sea travel that has never yet been fully satisfied.

The two days spent on my first visit to Colonsay merely whetted my appetite for a longer spell and on the homeward ferry I met an enthusiastic and persuasive naturalist, called John Clarke, who has settled on the island. He persuaded me (without much difficulty) to begin planning my return there and then. Eventually plans were completed for a further visit in July. My prayer that the grey, damp weather of 1987 would be improved upon in 1988 went unheard. The promising spring and early summer weather broke towards the end of June and the crossing was again wet, windy and pretty chilly. There was only a slight improvement on subsequent days. It was not so much that it rained continuously, but it was rarely dry for long and the strong winds ensured that it was never or rarely warm. Of course this didn't stop the work going ahead and my programme of sampling a number of lochs and some of their inflow and outflow streams was barely completed in the five days at my disposal. My only attempt to take samples from out on the water involved John Clarke in the strenuous task of rowing a small boat up-wind in Loch Fada during a gale and for long periods he was able to make virtually no progress at all - half an hour to row less than half a mile. I don't think his arms have ever recovered! I'm afraid that that was the end of open-water sampling and all other samples had to be taken from the shore or shallows.

The wild weather could not detract from the beauty of some of the lochs and burns. A number of the former are shallow, well endowed with floating vegetation and, at the time I was there, White Water-lilies (*Nymphaea alba*) were flowering profusely. No doubt a few weeks earlier Bogbean (*Menyanthes trifoliata*) and Marsh Marigolds (*Caltha palustris*) would have made a similar show. In the marshy areas near to the lochs, Purple Loosestrife (*Lythrum salicaria*) was quite the most striking plant, flowering in a profusion of long purple-crimson spikes, a colour which was echoed around the shores and banks because it was flowering time for the Bell Heather, thistles, Wild Thyme and Red Clover, in fact it seemed to be the flora's 'crimson period'. One of my favourite flowering plants of shallow waters, the Water Lobelia (*Lobelia dortmanna*) was quite common, but I suspect that its delicate and rather insignificant flowers were not yet in full bloom as I was not aware of them making much contribution to the flowers of the shallows.

Once or twice blue damselflies were on the wing when the sun shone and the wind had dropped a little, although I was not able to spend much time watching them or looking for them.

I'm afraid that much the same has to be said of the birds, and although I did hear and see Choughs they weren't as obvious or as numerous as they had seemed in 1987. I was told that they had had a poor nesting season in 1988 and few chicks had been reared, whereas the previous year there had been five successful nests.

A short article such as this cannot hope to provide a complete picture of even a small island such as Colonsay. A quick review of some highlights and my mental pictures includes narrow roads running between banks of Yellow Flag (*Iris pseudacorus*), above which lie pockets of grass and flowers set amongst grey rocks frequently rising up steep hillsides. Here and there are grass fields, grazed by sheep and occasionally cattle, while nestling beside these are crofts, generally looking clean and neat, a mixture of stone, painted corrugated iron roofs and colour-washed walls. Occasionally fields left ungrazed and kept for hay will resemble a Swiss alp in their profusion of wild flowers and, away from these, especially on the damper parts of the hillside, orchid flowers carpet the ground so densely that avoiding them while walking is virtually impossible. In contrast to the openness of these areas, the grounds of Colonsay House, parts of which are open to the public, are thickly planted with full-sized trees, sheltering in the lee of a hill from the force of the Atlantic gales and beneath these there is a problem in controlling the dense scrub vegetation and undergrowth.

There is an amazing and fascinating variety of nature within a few square miles, from beautiful sandy beaches to high bird-covered cliffs and from the machair of the south end of Colonsay and Oransay to the miniature mountains (almost 500 feet high) of the central and northern end of the island. Two days was an introduction, five days was frustratingly short, perhaps next time I ought to stay two weeks.

I would like to express my grateful thanks to the committee of the Edinburgh Natural History Society for their award of a grant from the Ian Sime Bequest Fund to help me with travelling expenses.

D. Jones

NOTES ON NATURAL HISTORY - 1988

Observations

1.11.87 Cockburnspath: Rooks mobbing a Fox in the centre of a large field. (D.A., G.M.)

26.11.87 Fala Moor, Midlothian: Peregrine Falcon swooped on a Red Grouse and missed. (C.P.R)

1.12.87 Inverleith Park Pond, Edinburgh: 1 Black-headed Gull with complete "black" head. (C.P.R.)

4.12.87 Royal Botanic Garden, Edinburgh: 1 Great Spotted Woodpecker. (C.P.R.)

14.12.87 Barnton, Edinburgh: 17 Redwing perched in Japanese cherry tree for most of the morning. (E.McA.S.)

15.12.87 Aberfoyle Quarry: Chinese Apple-tree in fruit (*Malus yunnanensis*). (D.H.)

22.12.87 Prestonfield, Edinburgh: On the shortest day, 16 Magpies congregated at dusk with much chattering and movement in the branches of 2 trees. Behaviour similar to that often seen in rooks. (D.G.)

27.12.87 Dunkeld: 2 Red Squirrels at the Hermitage. In neighbouring hills Water-boatmen active in pools, and Common Whitlowgrass (*Erophila verna*) in bud, both indicative of the mild winter. (D.A., G.M.)

3. 1.88 Aberlady Bay, East Lothian: A light-breasted Brent Goose. (B.C.)

3. 1.88- 28. 2.88 Morningside, Edinburgh: 1 male and 1 female Blackcap feeding on ground and on bird table. (A.E., A.E.)

4. 1.88 Glencorse, Pentland Hills: Caterpillar of Ruby Tiger Moth walking on the grass verge of the wood. (C.P.R.)

10. 1.88 Aberfoyle: 15 large anthills by a forest road. A survey would reveal many more. (D.A., G.M.)

16. 1.88 Musselburgh Lagoon: 5 Lapland Buntings. (C.P.R.)

16. 1.88 Gosford Beach, East Lothian: 3 Surf Scoters, 2 male and 1 female. (C.P.R.)

17. 1.88 Royal Botanic Garden, Edinburgh: 1 male Blackcap seen in good light and conditions. (C.P.R.)

18. 1.88 Dalmeny Estate, South Queensferry: Dead Grey Seal pup on the foreshore. (C.P.R.)

24. 1.88 Morningside, Edinburgh: Great Spotted Woodpecker at nuts. (A.E., A.E.)

24. 1.88 Strathclyde Country Park: 1 male and 2 female Smew. (B.C.)

11. 2.88 Glentress Forest, Peebles. A pure-white Ermine was observed hunting in an old quarry. (E.G., C.P.R., M.R.)

13. 2.88 Yellowcraig, East Lothian: Yellow Figwort (*Scrophularia vernalis*) in flower. (Group Outing)

13. 2.88 Yellowcraig, East Lothian: Sea Mat (*Membranipora membranacea*) found on the shore. (C.P.R.)

23. 2.88 Holyrood Park, Edinburgh: 1 Merlin flying over Dunsapie area. (C.P.R.)

28. 2.88 Yair, Selkirk: Red Squirrel. Moschatel (*Adoxa moschatellina*) in flower. (D.A., G.M.)

5. 3.88 Gosford Bay, East Lothian: 2 males and 1 female Surf Scoter. (B.C.)

20. 3.88 Comely Bank Road, Edinburgh: 0510 GMT, Mistle Thrush singing. (C.P.R.)

9. 4.88 Musselburgh Lagoons: A Mediterranean Gull and an Iceland Gull. (B.C.)

15. 4.88 Mortonhall, Edinburgh: Willow Warbler on golf course. (A.E., A.E.)

24. 4.88 Pitlochry: Osprey over Loch Faskally. Ospreys are on the increase in Central Perthshire. Later in the season (12 June) 3 active nests seen in addition to the one at the Loch of Lowes. (D.A., G.M.)

25. 4.88 Blackhall, Edinburgh: Willow Warbler in my garden. (M.R.)

30. 4.88 South Queensferry: First Swallows flying near Echline roundabout. (M.R.)

6. 5.88 On the Ulva ferry from Mull to Staffa, the boat was slowed down to allow passengers to enjoy the spectacle of a large school of Dolphins "playing" around it. They were last seen here in 1985. Weren't we lucky! (E.S.R., M.R.)

8. 5.88 Braids, Edinburgh: Dotterel spent several hours around the 5th tee of No. 1 golf course. (A.E., A.E.)

9. 5.88 Blackhall, Edinburgh: 7 Swifts were seen, a first sighting. Only one pair hawked the skies above my suburb where there used to be so many. It was a pleasure to see a large party of them screaming overhead at Bankfoot village at the start of our walk on 21 May. (M.R.)

14. 5.88 Dawyck Botanic Garden, Stobo, Peeblesshire: Wood Warblers. (M.R.)

15. 5.88 Hopetoun, South Queensferry: First Chiffchaff heard. (M.R.)

22. 5.88 Prestonfield, Edinburgh: Cuckoo heard in Priestfield Road. Perhaps from Bawsinch? (B.G.)

22. 5.88 Threipmuir, Balerno: Red-necked Grebe. (A.E., A.E.)

28. 5.88 South Queensferry: A singing Whitethroat in the scrub at Echline roundabout. A female Yellowhammer was also seen in the grass verge. (M.R.)

5. 6.88 Bannock Burn: Masterwort (*Peucedanum ostruthium*) near North Third Reservoir. (D.A., G.M.)

9. 6.88 Fala Moor, Midlothian: A hen Red Grouse on the road gave a broken-wing display while her chicks escaped into the heather. (C.P.R.)

10. 6.88 Dalmeny Estate, South Queensferry: Family of 8 Stoats on the public path, too busy jumping around and over one another to notice the observer. (D.A.)

12. 6.88 Butterstone, Dunkeld: Adder on the road to Ordie. Moonwort (*Botrychium lunaria*) - a deciduous fern - on the verges. (D.A., G.M.)

15. 6.88 Hopetoun, South Queensferry: The first Spotted Flycatcher seen. (M.R.)

16. 6.88 Hopetoun, South Queensferry: A male Yellowhammer was singing on the minor road leading to Hopetoun. I believe a pair nested in the hedge beside the cornfield. (M.R.)

19. 6.88 Barnton, Edinburgh: Orange-tip butterfly on Rosebay Willowherb (at same site as and within 2 days of last year's observation). (E.McA.S.)

19. 6.88 Threipmuir Reservoir, Balerno: A male Ruddy Duck. (B.C.)

23. 6.88 Lauriston Castle, Edinburgh: 3 Orchids flowering - *Dactylorhiza purpurella, D. fuchsii* and *Listera ovata*. (D.A.)

30. 6.88 Droman, North-west Sutherland: Herring Gull, hunting young Rabbits, caught one and lifted it 10-12 feet in the air before it struggled free and dropped. Gull repeated tactics and was later seen feeding on a dead Rabbit. (J.C.)

30. 6.88 Ben Chonzie, Crieff: Golden Eagle seen soaring more than a mile away. As we searched for alpines a large shadow passed between us. The Eagle swept past us less than 50 yards away. (D.A., G.M.)

.7.88 Hopetoun, South Queensferry: In July the fungi began to appear. There were Birch Boletus as big as dinner-plates, and some good Horse Mushrooms, as well as Chicken of the woods on an old Oak. (M.R.)

3. 7.88 Loch Laggan: Large Heath butterfly in numbers on Luiblea moors. (W.B.G.)

7. 7.88 Hopetoun, South Queensferry: 3 young Jays and parent birds in Bog Wood. (M.R.)

21. 7.88 Hopetoun, South Queensferry: A young Redstart, possibly on migration. (M.R.)

24. 7.88 Hopetoun, South Queensferry: 3 nests seen on the Round Pond. One is the abandoned nest of Moorhen with an addled egg. The second is of Coot, later deserted, having been flooded out. The third is of Little Grebe, which stayed to hatch 4 young, making a first-breeding record for Hopetoun. (M.R.)

30. 7.88 Stornoway: A family of Hebridean Wrens, much redder in colour than our common wren. (M.R.)

7. 8.88 Strath Braan, Dunkeld: Dutch Rush (*Equisetum hyemale*) by the Tombane Burn. This uncommon plant may also be seen in the field at Rosslyn Castle. (D.A., G.M.)

7. 8.88 St. Luke's Lane, Edinburgh: Fungus *Craterinum minutum*, identified by Dr. Roy Watling. (C.P.R.)

9. 8.88 Davidson's Mains, Edinburgh: A cluster of *Agaricus bohusii*. This is a large brown-spored fungus reminiscent in appearance of the more common (white-spored) shaggy parasol, *Lepiota rhacodes*. (E.McA.S.)

12. 8.88 Morningside, Edinburgh: Willow Warbler in apple tree. (A.E., A.E.)

14. 8.88 Blair Atholl (NN 875670): Scotch Argus butterfly colony. (W.B.G.)

25. 8.88 Gala Water near Stow, Midlothian: 1 Mink. (C.P.R.)

28. 8.88 Blackhall, Edinburgh: 2 Red Admiral butterflies on Buddleia. (E.G.)

4. 9.88 Dunkeld Woods: Jays scattered noisily when a Sparrowhawk appeared. The aggressive bird then focused its attention on a Kestrel and nearly brought it down. (D.A., G.M.)

14. 9.88 Gifford: Quite a large patch of *Mimulus moschatus* growing in a burn close by Hopes Reservoir. (V.McF.)

28. 9.88 Threemiletown, Philpstoun: Fox near Union Canal. Jay seen in same area. (R.C.)

3.10.88 Murrayfield, Edinburgh: Great Spotted Woodpecker exploring trees in the garden at Guardians Wood. (V.McF.)

5.10.88 Silverknowes Promenade, Edinburgh: There was a good selection of waders to be seen, viz.: Curlew, Oyster-catcher, Bar-tailed Godwit, Redshank, Turnstone, Dunlin, Ringed Plover; and, resting on a sand-bar, a flock of about 250 Golden Plover, many of which still carried breeding plumage, as did the Dunlin and the Godwit. There were hundreds of gulls, Great Black-back, Herring and Black-headed being the most numerous. Sandwich Terns were being harried by all three species of gulls. Apart from the ubiquitous Mallard, we saw no ducks, the tide being very far out. (E.S.R., M.R.)

8.10.88 Yellowcraig, North Berwick: A female Hen Harrier. (B.C.)

30.10.88 Gullane: Short-eared Owl on no. 2 golf course. (A.E., A.E.)

30.10.88 Threemiletown, Philpstoun: Fox being mobbed by Rooks. (R.C.)

13.11.88 Craigie Barns, Dunkeld: A pure-white Fallow Deer with splendid antlers. The presence of this handsome male is reflected in the marked number of light-coloured animals in the herd. (G.M., D.A.)

Noctule bat at St. Abbs

On 21 October 1988 we were looking for bird migrants at St. Abbs, Berwickshire, during a spell of south-east winds, when our attention was drawn to a rather wader-like animal flying at more than 100 feet above the loch, and to our astonishment it turned out to be a bat. It was large (twice the size of the occasional finch that flew agitatedly near it) and looked dark-coloured in the somewhat dull light. The wings were long and slender and the flight was fast, regularly changing height with swoops and climbs looking rather Swift-like in the process. Through binoculars we could often see the ears which were medium-sized and upstanding so obviously it was not a Long-eared Bat. The time was around 1 p.m. but another bird-watcher had seen a bat in the morning in the same area. It was under observation for some 10 minutes. Because of its size and mode of flight and its distinctive shape this could only be a Noctule Bat. Although not recorded in Scotland in the 'books' there is apparently at least one colony by the River Tweed.

E.M. Smith and R.W.J. Smith

Garden birds

Yellowhammers are by no means rare in this area but they are not commonly regarded as "garden" birds. However, this summer, for the first time, we have a cock Yellowhammer as a regular visitor in our Dunglass garden, near Cockburnspath. He not only joins the usual assorted species (Chaffinch, Dunnock, Sparrow, Greenfinch and Tits) taking seed from the ground, but holds his own at the bird-table, the nut-cages, and even the seed-bowl on the kitchen windowsill. The close-up views are even more attractive when he is joined by the Marsh Tit who is again one of our "regulars" after a complete absence last year.

M. Watson

Town birds

Blue Tits are usually the only visitors to the nuts and fat put out at this Marchmont flat, in Edinburgh. During the spell of hard frost - 20-25 November 1988 - there has been a welcome variety: Sparrows and Starlings cashed in, Blackbirds reappeared, a Song Thrush came to the window with a Robin, the Blue Tits were out numbered by Coal Tits and Great Tits, but topping the list for size and weight was a Herring Gull, which luckily did not stay!

E.R. Landells

The case of the dunking corvids

Renewing the birds' drinking water in the garden I had often been puzzled by bread crumbs in the water.

One day I happened to see a Crow hop up to the water with bread in its beak and drop it into the water and then proceed to eat it. I saw this happen several times during the next few days. A week or so later I saw a Magpie do exactly the same thing.

I wonder if other members of the Crow family do this and if so, why?

B. Gill

Stoat

On 27 February while walking in the Dawyck valley, my attention was drawn to the movement of something white across the Tweed. This turned out to be a stoat completely white except for some brown markings on its face and of course the black tipped tail. There was snow on the hills at about 2000 feet and over a mile away, so against the green grass it was very conspicuous. It came along the far bank and into an open wood opposite where I was, and then up hill through mature oak trees. Quite suddenly I lost sight of it, but seconds later saw it 30 feet up the trunk of one tree. Stoats do climb well, but there was no scrambling and no side branches to help. There I lost sight of it where there were dead leaves and side limbs. What took it there? No eggs or young birds in the nest in February. Perhaps it had a warm, off the ground sleeping place? Any comments would be appreciated.

E.R. Landells

Stonechats

In several years now stonechats have been conspicuous by their absence in the Lothians and many eastern areas where once they could be seen fairly regularly. This year there have been reports of breeding again in the Pentlands, and occasional birds have been seen elsewhere during the autumn. It was a great pleasure to see a pair on three occasions in the Meldons where they used to be regularly, so perhaps this attractive bird is making a recovery from hard winters in the seventies and early eighties.

E.R. Landells

Badger watching

During the spring and early summer, evening watches were kept at a badger sett in West Lothian. As the sett was close to the road all the watches took place from the car giving a warmer, drier and better viewing point than one would have had from the field. The majority of those who came watching had not seen badgers in the wild before so we were lucky that on every evening except one there was the thrill and excitement of seeing badgers moving around in the vicinity of the sett. On some evenings a total of five were seen; at other times just the mother and two cubs were around. On several occasions we watched a small family procession cross the road in front of the car and forage along the verge before disappearing through the hedge into the field. One wondered how long it would be before a passing car would claim a victim.

The sett was known to have three entrances on a raised bank. Two could be seen from the car but the third was on the other side of the bank, and early in the season the badgers tended to emerge from this third entrance. However, on our only unsuccessful evening we were delighted to find that the farmer had blocked this entrance with vast quantities of hay by using the bank as one side of his silage pit. From then onwards the badgers always came out by the entrances that could be seen from the car.

By June vegetation and crops were providing such dense cover that watching at this sett was no longer worthwhile.

E. Farquharson

Unusual trees seen during the year

At Lluch Monastery, Majorca, I noticed a very beautiful tree. It was perfectly symmetrical with a large round dome and spreading arching branches which ended in delicate twigs with pointed new-green leaves. Closer examination revealed faded, very small white flowers from each of which a small green fruit was developing. What could it be? From notes taken as well as specimen twigs I was able to identify it later as the Southern Nettle tree (*Celtis australis*) which, according to Alan Mitchell in *A Field Guide to the Trees of Britain and Northern Europe*, is "confined to collections". The leaves are similar to nettles but have a long twisted tip as well. This tree must give welcome shade in the hot summer months. I've never seen it anywhere else.

I started to look for unusual trees on our outings. At Dawyck Botanic Garden there is the "Dawyck" beech which grows tall and thin like a Lombardy Poplar. In the Dundas Estate, South Queensferry, we found the Scotch Laburnum (*L. alpinum*) which flowers later than the Common Laburnum and has pods with the upper seam winged. At Dunglass Estate, Cockburnspath, we noted two Walnut trees, not often seen in Scotland, and a very fine Strawberry tree (*Arbutus unedo*) usually seen as a small shrub in the Mediterranean maquis/garigue scrub. At the car park in the Dalmeny Estate, South Queensferry, the Dove or Ghost tree, often called the Handkerchief tree (*Davidia involucrata*) grows. The name is derived from the long white bracts, veined like a leaf, which hang down from and hide the small purple flower. At Hopetoun there is the tulip tree (*Liriodendron tulipifera*). A storm in July broke off a branch so we were able to examine the showy tulip-like flowers.

Tree-spotting is quite a nice thing to do on a bus journey if you sit in front on the upper deck. In this way I have noticed Silver Lime bordering the wall of the Royal Victoria Hospital, two Blue Cedars at the Orchard Brae traffic lights, a Cedar of Lebanon at the Crest Hotel, Queensferry Road and a Walnut tree near Woolworth's in Raeburn Place, Stockbridge.

M. Robertson

Red deer hind with two calves (see notes in ENHS Journal 1987, p. 25)

Readers may remember that last year, the Rangers at Hopetoun had observed a hind suckling two calves and were puzzled by this strange behaviour. The explanation is quite simple.

The keeper told us that the calves were born on the same day and ear-tagged at the same time, so that the scent of the first calf was transmitted by his hands to the second. Recognising the scent of her own calf, the mother hind then accepted this second one as her own also. Meantime, the second hind was racing round the deer park calling for her "missing" calf.

M. Robertson

Fungal finds 1988

Rather a disappointing season on the whole for the ENHS forayers with regard to quantity and variety except on two non-fungal outings - Tentsmuir and Rumbling Bridge - when we were overwhelmed.

During the season there have been some interesting finds. At Rumbling Bridge, *Calocera pallidospathulata* was found in a coniferous wood. While not very exciting in appearance it is of historical interest having been first discovered in Yorkshire in 1969. Since then its spread over the country has been monitored. The find at Rumbling Bridge is the fourth in Scotland and the most northerly. Search for it has been made without success at Tentsmuir, Beecraigs, and Vogrie.

Volvariella speciosa turned up twice in early September; once in the grounds of Lauriston Castle and once close to the coniferous shelter-belt behind the dunes at Linkfield by Dunbar.

In July, a muddy exploration of the old gunpowder workings in Roslin Glen produced a really small cordyceps - *Cordyceps sphecocephala* - which grows on fly remains. This is a rarity and its identification was confirmed by Dr Roy Watling.

August produced a group of five perfect *Sarcodon imbricatum* growing close to the path between Coylum Bridge and Iron Bridge.

On a routine visit to Bavelaw Marsh a large russula was found amongst conifers. This was *Russula obscura* which is usually associated with the Scottish Highlands.

Last year *Asterophora lycoperdoides* was found growing on decaying *Russula nigricans* beside a road leading out of Boat of Garten. It was brought home and kept in the garage for several weeks where it continued to fruit until all the russula remains had disappeared. It turned up again this year in exactly the same place, but two months later, in September.

E. Farquharson

May 1988

On disturbed ground in the garden of a house in Loanhead a large crop of Morels (*Morchella esculenta*). They were not known in previous years and presumably the disturbance of the ground triggered their appearance.

D.C. Manson

Butterflies and moths in Lothian, 1988

At last favourable weather for butterflies in the spring! But though some species emerged earlier than usual, none was in great numbers. I saw the Meadow Brown on 26 June at Linlithgow.

The Small Tortoiseshell recovered only slightly from the last two years' near-elimination. I saw only three in Lothian from 3 April to 6 July but in August they appeared more frequently. The Painted Lady was about on the East Lothian coast in the second half of May. My first sighting of the Orange-tip was at Eskside on 6 May.

Moths proved more interesting. On 8 August I came on a large colony of the Vapourer Moth larvae on the path below White Hill, Bonaly. A pretty insect with four conspicuous brushes on its back, its adult female is wingless. The Six-spot Burnet had an exceptionally good year on the East Lothian dunes and seems to be increasing inland. At Salisbury Crags site on 2 August, I saw more than a dozen feeding on Knapweed.

W.B. Grubb

Forth island bird counts, 1988

	Craigleith	Lamb	Fidra	Eyebroughy	Inchkeith	Inchmickery	Carr Craig
Fulmar	124	4	140		473	14	
Cormorant	83	57		73			158
Shag	435	250	86		9	24	24
Eider	X		190		X	159	
Great Black-backed Gull	5	1	3				
Lesser Black-backed Gull	400	X	115		X	81	
Herring Gull	X	X	575	X	X		43
Kittiwake	770	175	622		490		
Common Tern						146	
Sandwich Tern						383	
Roseate Tern						21	
Razorbill	62	29	53		40		
Guillemot	1300	2400	131		24 sites		
Puffin	1200	c.10 sites	350		1850		

X means present but not counted.

Guillemot and Puffin counts are of individuals. All others are sites or pairs unless indicated. My thanks to the RSPB for kindly allowing the use of their Inchmickery counts and some of their Fidra ones.

A hint in the 1987 report that a good spell of weather this year would 'maybe' provide all the answers was apparently considered a 'dare' by the gods of Olympia. For this year at least the weather was never **too** bad. A visit to Carr Craig in beautiful weather gave 158 Cormorant nests, 21 more than last year. The 213 total nest count for the East Lothian islands is standard for the last few years and it now seems that the Inner Forth group, based on Carr Craig and established as a separate entity, is rising steadily to the stability platform of 200-250 pairs (caution - Apollo may not yet have had his last word!).

Two visits to Craigleith in May gave (a) a head count of 355 pairs of Lesser Black-backed Gulls which, with an estimated *ca* 10% error undercount (due to dead ground), yielded a total of around 400 pairs; (b) a 'sample' count following the NCC method as used in the 1987 counts gave between 20% and 25% of the total big gulls as Lessers - resulting in an estimate of 650-800 pairs of Lesser Black-backs. Is the oracle suggesting that the 1987 NCC numbers for Lessers on Inchkeith, Inchcolm and Craigleith could be more than twice the correct figures? Perhaps the sacrifice of an NCC warden or two is called for to propitiate the gods.

A true Delphic disinterest was shown when the party for the Craigleith trip arrived at North Berwick to find the boat high and dry in the harbour with four hours before it would be afloat. An alternative date found the gods in more conciliatory mood and we managed to land and get a good count. We located 5 pairs of Great Black-backed Gulls which, along with a pair on the Lamb and 3 pairs found by the RSPB on Fidra, shows a substantial increase of this fine predator. The RSPB count of Eider on Inchmickery gives an increase of 40 nests to a remarkable total of 159 on this small island. Once again the Roseates are holding their own but, sadly, Common and Sandwich Terns are again down.

As last year, we zoomed out to Inchkeith in style but this year in glorious sunshine and with an excellent count. The only small cloud on our horizon was one of the island dogs which followed us round. This animal was often seen to pick up small gull chicks, give them a nip with its teeth then drop them dead on the ground. A Fulmar egg was cracked and discarded by the same animal. Obviously the potential capacity for damage by this one dog could be enormous.

What of the overall result which was to provide all the answers? The Kittiwakes have lost some of last year's big gains. Fulmar numbers have regained some of their 1987 losses but were down on Inchkeith. The Auks are holding up generally in spite of outside suggestions of a decrease. Have things now reached the swings and roundabouts stage?

R.W.J. Smith

EXCURSIONS 1988

Key for excursions:

B - botany
F - fungi
I - insects
Fe - ferns
G - general
Ge - geology
T - trees
Li - lichens
ML - mosses and liverworts
O - ornithology
S - seashore
So - soils

Day excursions and study tours:

			Leader
1987			
26 Dec	Gullane	S	
1988			
16 Jan	Gartmorn Dam Country Park, Alloa	G	Mr. I. Findlay (Ranger)
13 Feb	Yellowcraig, North Berwick	G	Mr. A. Mathieson (Ranger)
12 Mar	Caerlaverock, Dumfries	O	Mrs. J. Lyburn
16-23 Apr	Mallorca	OB	
30 Apr	Lammermuirs, East Lothian	So	Mr. K. Simpson
7 May	The Black Spout, Pitlochry with Dundee Naturalists Society	G	Mr. D. Manson
14 May	Dawyck Botanic Garden, Stobo	TG	Mrs. M. Robertson
21 May	Rohallion Woods, Dunkeld	OB	Mr. D. Adamson
27-30 May	Forres, Grampian		
28 May	Bass Rock with SOC	O	
29 May	Fidra with SOC	O	
4 Jun	Craigleith with SOC	O	
4 Jun	Twinlaw Cairns, Westruther	G	Mrs. J. Lyburn
11 Jun	Dunglass Estate, Cockburnspath	B	Mrs. M. Watson
18 Jun	Dalmeny Estate, South Queensferry	ML	Mr. J. Carlyle
25 Jun	River Ettrick, Selkirk with Central Borders Group, SWT	B	Mr. D. Methven

2 Jul	Ben Tarmachan, Killin	B	Mr. G. Swift
9 Jul	Pentland Hills	O	Mr. B. Clunie
16 Jul	Chatelherault Country Park, Hamilton	G	Mr. J. Brockie
23 Jul	Lindisfarne, Northumberland	B	Mr. D. Manson
30 Jul	River North Esk, Pentland Hills	Ge	Mr. B. Baird
6 Aug	Kilsyth with Glasgow Natural History Society	B	Mr. I. McCallum and Mr. D. Hunter
13 Aug	Rumbling Bridge, Dollar	GeG	Mrs. C. Stewart
20 Aug	Tentsmuir Nature Reserve	BG	
27 Aug	Torness Power Station, Dunbar (a.m.)		
	Torness Limestone Cliffs (p.m.)	BGe	Mrs. M. Watson
3 Sep	Cammo Park, Edinburgh	F	Mr. A. Bennell
10 Sep	Fala Moor, Midlothian	G	Mr. C. Rawcliffe
17 Sep	Leithen Valley, Peeblesshire	G	Mrs. J. Lyburn
9 Oct	Dollar Glen, Clackmannanshire	FLi	Dr. B. Coppins and Mr. A. Bennell
29-30 Oct	Kindrogan Field Centre, Perthshire	G	
19 Nov	Musselburgh and Aberlady	O	Mr. C. Pountain

Evening excursions:

11 May	Philpstoun Bing and Canal	B	Miss J. Muscott
18 May	Blackford Hill, Edinburgh	G	Miss D. Mack
25 May	Water of Leith, Edinburgh	G	Mr. C. Rawcliffe
1 Jun	Longniddry Bents, East Lothian	B	Mr. N. Clark (Ranger)
8 Jun	Dundas Estate, South Queensferry	G	Mrs. M. Robertson
15 Jun	East Kirkton, Bathgate	Ge	Mr. I. Bunyan
22 Jun	Faucheldean Bings, Winchburgh	B	Miss J. Muscott
29 Jun	Craigton Quarry and Canal, Philpstoun	B	Mr. J. Carlyle
6 Jul	Carberry Towers Arboretum	T	Mr. D. Manson
13 Jul	North Merchiston Cemetery, Edinburgh	G	Miss D. Mack
20 Jul	Lauriston Castle, Edinburgh	G	Mrs. M. Robertson

Evening study sessions

2 May	Study of the soils of the Lammermuirs	Mr. K. Simpson
6 Jun	Flower identification	Mrs. V. McFarland
27 Jun	Freshwater life	Mrs. E. Gillespie
5 Sep	Fungal identification	Mrs. E. Farquharson
10 Oct	Fungal identification	Mrs. E. Farquharson
14 Nov	Sedges	Mr. D. Adamson

Apart from the 2 May meeting which was held in the Edinburgh School of Agriculture at West Mains Road, these study sessions took place in the Society's room at Donaldson's School for the Deaf.

Members made use of the facilities in this room such as reference books, microscopes, projector and screen on a number of other occasions.

REPORTS AND ABSTRACTS FROM REPORTS

Gartmorn Dam Country Park, Alloa - 16 January 1988

After an interval of five years it was interesting to return to Gartmorn Dam. Drainage from the heavy clay soil is a big problem and the paths were rather muddy.

It is an important wildfowl wintering site and the island is a nesting place for several species of duck, and for this reason was designated as an SSSI in 1971. Certainly we saw many Mallard, some of them migrants from Scandinavia; there were about 150 Wigeon grazing beside the Dam; Teal, Goldeneye, Pochard, Tufted Duck, Coot and Little Grebe were also seen along with three Great Crested Grebe.

In the woodland we watched a dozen or so Long-tailed Tits and were delighted to see a large flock of Yellowhammer at the east end of the Dam, near farmland.

Mr. Ian Findlay, the Ranger, was very informative. Not only did he point out natural features but he gave us an account of the historical, archaeological and industrial development of the area, including evidence of an old run-rig system with its differing vegetation on the humps and hollows of the land. We appreciated his help very much. It may be a good idea to return in the summer months for the flowering species, including orchids, and for the summer migrants as well as fresh-water fauna and insects.

M. Robertson

Yellowcraig, North Berwick - 13 February 1988

There was a cold wind blowing as 23 members assembled in the car park to meet Mr. Archie Mathieson, Chief Ranger for East Lothian, who had kindly agreed to guide us. So we took the shelter of an avenue of Sea Buckthorn as we made our way to the shore, and watched many small birds feeding there: Bullfinch, Yellowhammer, Chaffinch and the larger Fieldfare. Two Skylarks flew overhead with short bursts of song.

The mild winter had encouraged early growth: Ground Ivy, Cow Parsley and Yellow Figwort were well advanced. The Sea Buckthorn was still laden with fruit. It has been an exceptionally heavy crop at Yellowcraig this year, no doubt the result of good pollination in the 'summer' weather of April 1987.

There were very few birds on the shore. Dunlin, Ringed Plover and Redshank were seen and Turnstone and Oyster-catchers on the rocks. There were several groups of Eider at sea, and male Goldeneye were displaying, tossing heads and lifting tails. A few Gannets were seen far out to sea.

We turned across the dunes for lunch in the shelter of an old wall. A flock of about 200 Fieldfare flew across to feed on the Buckthorn. They are lovely birds. In the woodland we found many pine shoots blown down: in one of them the small, black Pine-shoot beetle was found. Under the sycamore trees were many Earth-stars. This fungus grows under beech according to the books, but on the East Coast it seems to prefer the sycamore tree. It also grows under sycamore at Tyninghame and on Cramond foreshore.

Mr. Mathieson pointed out how green the fronds of Male Fern have remained throughout this 1987-88 winter. Usually they are shrivelled by frost early on in November.

A Storm-cock, the old country name for the Mistle-thrush, started to sing and lived up to his name. Shortly after, heavy rain and sleet brought an end to our excursion. It is always enjoyable to go out in dry weather for a winter walk and we all enjoyed the visit to Yellowcraig, entertained as we were by stories and anecdotes of Mr. Mathieson or trying to make a whistle from a Limpet shell or Dog Whelk, and learning so much from his country lore and keen observation.

We were fortunate to have such a first-class field naturalist to lead us.

M. Robertson

Caerlaverock Reserve, Dumfries - 12 March 1988

On a pleasant early spring day a busload of us travelled through to Caerlaverock. It was an enjoyable journey, as there was much of early spring activity to watch: Lapwings practising warm-ups in preparation for their aerobatic displays; a Dipper dipping to his reflection in a stream; and lambs and rabbits scattering the fields. Crows, Rooks and Jackdaws flapped and cawed, and bushes were alive with Blackbirds busy with house-building. Some Pheasants added a colourful splash.

On arrival at Caerlaverock we all split up and went our several ways in our own time around the main observation towers and the many hides. We were extremely fortunate, as there was so much to see. The geese had been sheltering on the mudflats, quite far out, but in the course of the afternoon several skeins of geese - Barnacle, Pink-foot and some Greylag - came skimming in to land on the far fields and the merse. We had seen a male Canada Goose patrolling his patch on our last visit to Caerlaverock, and it was natural to enquire about him. He and his mate had been unsuccessful in breeding last year, but there are quite a few pairs of feral Canada Geese settled about 5-10 miles away from the reserve, and they frequently 'call-in'.

The main water was crammed with Whooper Swans and some immatures, a few Mute Swans and their immatures. There were also many Wigeon and some Teal, as well as a solitary Tigeon - yes, a 'new' species, this one being half teal and half wigeon. The result is quite attractive, with the teal head and a mostly wigeon body. Over the whole reserve we saw on or by the water many Lapwings, Oyster-catchers, Mallards, a Lesser Black-backed Gull, Shovelers, Redshanks, Gadwall (two drakes and one duck), one Heron, and some Shelduck and Moorhens.

Other parts of the reserve had Chaffinches, and a flock of Greenfinches which were avidly eating from a bird-table and nut-bags. At the foot of the bird-table were some Yellowhammers, with brilliant heads. A few Curlew hesitantly stretched wings and practised a few notes. There was a small flock of Golden Plover, one or two of which were very golden in the pale sunlight, and which were already sporting their black 'vests'. A Goldfinch was seen, as well as Blue Tits, Robin and Dunnock.

The warden had told us that the Whoopers got fed at 2 p.m. and this was a fascinating sight, as the birds came right up to the observatory window in their eagerness to eat their fill of the barley. These Whoopers eat their way through 20 tons of barley a year. It was a wonderful view of those large and extremely elegant swans, even though their enormous black feet do look comical. Having been fed, a few of them started to really whoop in chorus, and their full 'song' is a loud and exuberant sound.

After the Whoopers had eaten, it was the turn of the smaller birds to partake of the leftovers, and once again it was a superb opportunity to view many of these ducks at such close quarters.

We were told that Peregrines are in the area, and had been seen earlier in the morning, but by afternoon they most probably would be hunting.

Winter brings many visitors, and Caerlaverock has Bewick Swans. However, by March they had departed - but we know now where and when to see them. Other visitors include Roe Deer.

It was a wonderful day's viewing, and when we left at 4 p.m., we all felt it had been a really enjoyable day, both in the numbers of birds we saw, and in the weather.

K. Manson

Mallorca - 16-23 April 1988

On Saturday, 16 April a group of members of the Edinburgh Natural History Society made their way to Glasgow en route to Puerto Pollensa in Mallorca. After a delay of three hours we embarked for our flight to Palma complete with flower- and bird-books, cameras, binoculars and a telescope. This last item aroused some friendly and humorous interest among the security and passport personnel. After a quiet flight we arrived in the soft Mediterranean night to the sparkling lights of Palma and travelled on by bus to Puerto Pollensa.

Next morning we awoke to a clear blue day. We found our apartments to be spacious and well appointed. After a quick sortie to see the lie of the land, locate the sea and the local shops we breakfasted on our balconies and prepared picnics. Some necessary business connected with the hire of cars, which later gave us access to a variety of habitats, was concluded and we then set out on foot for our first excursion.

We found Puerto Pollensa to be an attractive little town built along the edge of a large lovely bay. It was sheltered to the south by the pretty hills of the Alcudia peninsula, to the north by the craggy limestone mountains of the Formentor peninsula, and stretching westwards behind the town was the rich central plain of Mallorca. We walked along the sea-front promenade past the busy marinas and the harbour and had our first taste of the exotic flora of the island. The promenade was lined with Canary Island Palm (*Phoenix canariensis*) and clumps of venerable Umbrella Pine (*Pinus pinea*) had been preserved. Occasionally on the beach itself there grew Tamarisk (*Tamarix africana*). We traversed the town via its shady narrow streets and arrived at the waste land, once meadow and orchard, but now being laid out for development, which formed the foothills to the ridge of limestone mountains to the north.

Here was our introduction to the rich variety of meadow flowers. On the disturbed ground by the road's edge we found the lovely scarlet Pheasant's Eye (*Adonis annua*). There was much Viper's Bugloss (*Echium vulgare*), and the lovely lemon-yellow *Urospermum dalechampsii* with its dark central 'eye'. Quantities of the decorative spiny 'thistle' *Galactites tomentosa* were in flower. The blossoms of this 'thistle' were very attractive to large numbers of Painted Lady butterflies which flitted restlessly from bloom to bloom. These butterflies were present in abnormally large numbers this year on their migratory flight from Africa to Europe. Later we remarked that their more purposeful flight was always northwards. Here too where we passed by an old farm we saw Fig trees (*Ficus carica*), Carob trees (*Ceratonia siliqua*) and the Fan Palm (*Chamaerops humilis*). We rounded the rocky spur on which the farm stood perched high above the town and the plain, for we had been steadily climbing upwards, and found ourselves in the famous and austerely beautiful Bocquer valley.

We were now walking in that arid limestone habitat known as *garigue*. Many of the plants growing here contain aromatic oils which scent the air. Typical of these is Rosemary (*Rosmarinus officinalis*) which was in full bloom. Others have leathery or waxy foliage such as the shrub, specific to these islands, *Hypericum balearicum*. This has a variegated foliage of dark green edged with gold and bears large yellow blooms with the characteristic star-burst of anthers. Other plants develop very thorny growth as in the shrubs of *Pistacia lentiscus* which formed impenetrable thickets, or the small ground-crouching Hedgehog broom (*Erinacea anthyllis*) which is so aptly named. There were large areas of the handsome pin-striped *Asphodelus aestivus* which betokened the impoverishment of such soil as there was. This is probably because of over-intensive grazing by the long-legged Mallorcan sheep which roamed among the bushes in search of the sparse, harsh fodder. In this valley as we picnicked we were delighted by the sight and song of the Sardinian Warblers and excited by the flight and calls of our first Hoopoes. We were watched by the Blue Rock-thrushes which flew from high point to high point of their territories. High above the rocky ridge of the mountains a pair of Peregrine falcons soared.

Next day, our cars having been delivered, we set off to see a very different habitat, the great reed marshes, the ruined salt-pans and the Nature Reserve of the Albufera. The reserve was to prove so rewarding that we returned for a second visit. En route some of us took a wrong turning and were rewarded by the sight of a field of *Chrysanthemum coronarium* var. *discolor* and tucked in the corner of another the lovely *Allium roseum*, in the pink of condition. Having retrieved our route we joined our colleagues, who had gathered at a convenient spot near the end of the Lago Esperanza. Here we were to see Grey and Purple Herons, Marsh Harriers, White Egrets and Osprey hunting. The waste ground along the waterway was gay with the flowers of *Bellardia trixago*, Orchids and Hottentot Fig (*Carpobrotus acinaciformis* and *C. edulis*). There were many butterflies including a Swallowtail. We drove on to the old salt-pans, now in a somewhat ruinous state but providing feeding grounds for numbers of water birds. It was our great good fortune to find here a solitary Glossy Ibis. This bird must have been blown off course from the Eastern Mediterranean and rested here for a few days where we watched it pace about, feeding, its dark plumage sometimes ruffled to show green and rose as it moved. By the end of the week it was gone. Here too we watched the graceful Black-winged Stilts feed and dance. In this ritual two or more birds would move on their long, long legs towards one another, breast to breast. As they approached their heads were lifted skywards, necks stretched, and then the birds moved backwards a little and repeated the figure. As we walked along the footpaths between the more than man-high reeds (*Phragmites australis*) we found numbers of tall purple *Orchis laxiflora* and in the short grass we searched diligently for the Tongue Orchid (*Serapias lingua*) and eventually found a few. It was late afternoon when we arrived in the reserve itself and most birds had ceased feeding, but in a grove of trees we disturbed a Nightingale which sang for a time. On each visit made here we were to hear this lovely sound. Nearby we came upon a clearing with many lovely flowers including the unusual *Blackstonia perfoliata* and the attractive grass *Briza maxima.*

We made an interesting journey on the winding mountain road to the lighthouse which stands at the north-eastern outpost of the island on Cape Formentor. These limestone mountains drop precipitously to the sea on their north face and we stopped at the Mirador, a magnificent outlook point above Puerto Pollensa, from which splendid views could be obtained. The southern exposure of the mountains is somewhat gentler and the slopes are covered by fine forests mainly of *Pinus halepensis.* Here also can be found Holm Oak (*Quercus ilex*) and Kermes Oak (*Quercus coccifera*). Under the trees is a rich undergrowth of *Cistus albidus*, usually with white blossoms, but some are of a rich rose-pink. There is much *Erica arborea*, which this year was not yet in bloom. It was here in the forest we found our first fine specimen of the Mirror Orchid (*Ophrys speculum*). In the pines around the farm at Casas Veyas we watched the Crossbills feed and saw the Tassel Hyacinth (*Muscari comosum*) growing in the small fields of the farm. On the road by a tunnel through the mountains we stopped, hoping to find the wild Peony but its flowering time was over and only the foliage and seedheads were seen. We did however find two plants of interest, *Erodium reichardii* and *Senecio rodriguesii.* Another delightful find was the *Cyclamen balearicum* with its delicate white blossoms. It grew among the rocks by the ancient mule-track which zig-zagged over the mountainsides and was once the only route to the look-out point and light at Cape Formentor.

Another excursion was made westwards along this same mountain range. Here the mountains are both higher and steeper. The highest mountain in Mallorca, Puig Major (1445 metres) is found here. There were points on the narrow, winding road where the cliffs rose above us on one side and fell sheer to the valley floor on the other. The craggy mountains had been carved in fantastic shapes by weather, and trees were stunted. In the midst of this wild landscape below Puig Tomir lies a fertile hollow in which stands the monastary and pilgrimage church of Lluch. Around the austere but handsome buildings are fine gardens and citrus groves. Brimstone butterflies were seen in the garden. We journeyed on to reach a landscape more familiar to our eyes where the Cuber Dam lay under the Puig Major. It was possible to walk around this reservoir and on the way we found Milkwort (*Polygala nicaeensis*) in the grass by the path, and on a rocky footpath the Alpine Toadflax (*Linaria alpina*).

Our longest excursion took us across the fertile plain of Mallorca with its fine crops of salad plants, vegetables and groves of olives and citrus fruits. We saw the ruins of the old windmills and passed through the secretive, shuttered towns with their narrow streets and necessary but tortuous one-way systems. The objective was a sea-cliff walk at Port Colomb. This pretty fishing port is at the south-eastern corner of the island. It has a harbour in a sheltered bay and is the shopping centre for a large part of this coastal area. New development is already taking place and we discovered to our chagrin that the beginning of the cliff path had been obliterated by the building of fine new villas whose brilliantly beflowered gardens went right to the cliff edge. By making a detour we found a mode of access to the cliff-tops where some members of the party hoped to see Audouins Gull which was known to haunt this area. Those who were botanists found themselves in an amazing rock garden. Among many finds we saw our first Barbary Nut (*Iris sisyrinchium*). Had we been an hour or so earlier it would not have been unfurled. The strange blossom which lives parasitically on the roots of the White Cistus (*Cistus salvaefolius*) was also found. It is *Cytinus hypocistis*. In every crack and cranny of the rock along the cliff-top there was a most beautiful yellow chrysanthemum (*Asteriscus maritimus*) which here is short in habit because of exposure to the wind. It was on this excursion we also saw what most of us had not seen for many years - clouds of swifts swooping, gliding and soaring above the fields.

The weather during our visit was warm, clear and sunny. In the evenings we were able to walk through the town in search of the little restaurants where we tried out various regional dishes, to our great pleasure. In all, this was a week of enjoyment and often of much excitement. Each participant will have his or her own special delights to recall and treasure. Our thanks must go to Mrs. Mary Robertson for organising everything so well.

V. McFarland

Philpstoun Bing, West Lothian - 11 May 1988

A succession of sunny days had brought even the oak and ash into leaf by the time of the Natural History Society's visit to Philpstoun Bing and the nearby Union Canal. However, the day itself was overcast, with a cold east wind and a haar, which brought out the gloves and winter woollies rather than the spring flowers.

Old shale bings are very much a feature of the West Lothian landscape. Oil-shale extraction was a major industry between the Wars, and Scotland then had a little Dallas rather than a second Silicon Valley. However, it is 40-odd years since the work stopped, and an interesting mixture of natural vegetation has grown over many of the remaining bings. (Some have been reclaimed - levelled and replanted - while yet others are being mined for road-making.)

The part of Philpstoun Bing south of the canal has been mined and there is apparently little vegetation on the raw shale. However, a closer look reveals a fine carpet of what is normally a rare plant of English limestone - Wall Whitlow Grass (*Draba muralis*) - growing in extraordinary profusion. It is present at one or two other nearby sites, but only in the small quantities one would expect of such an uncommon plant.

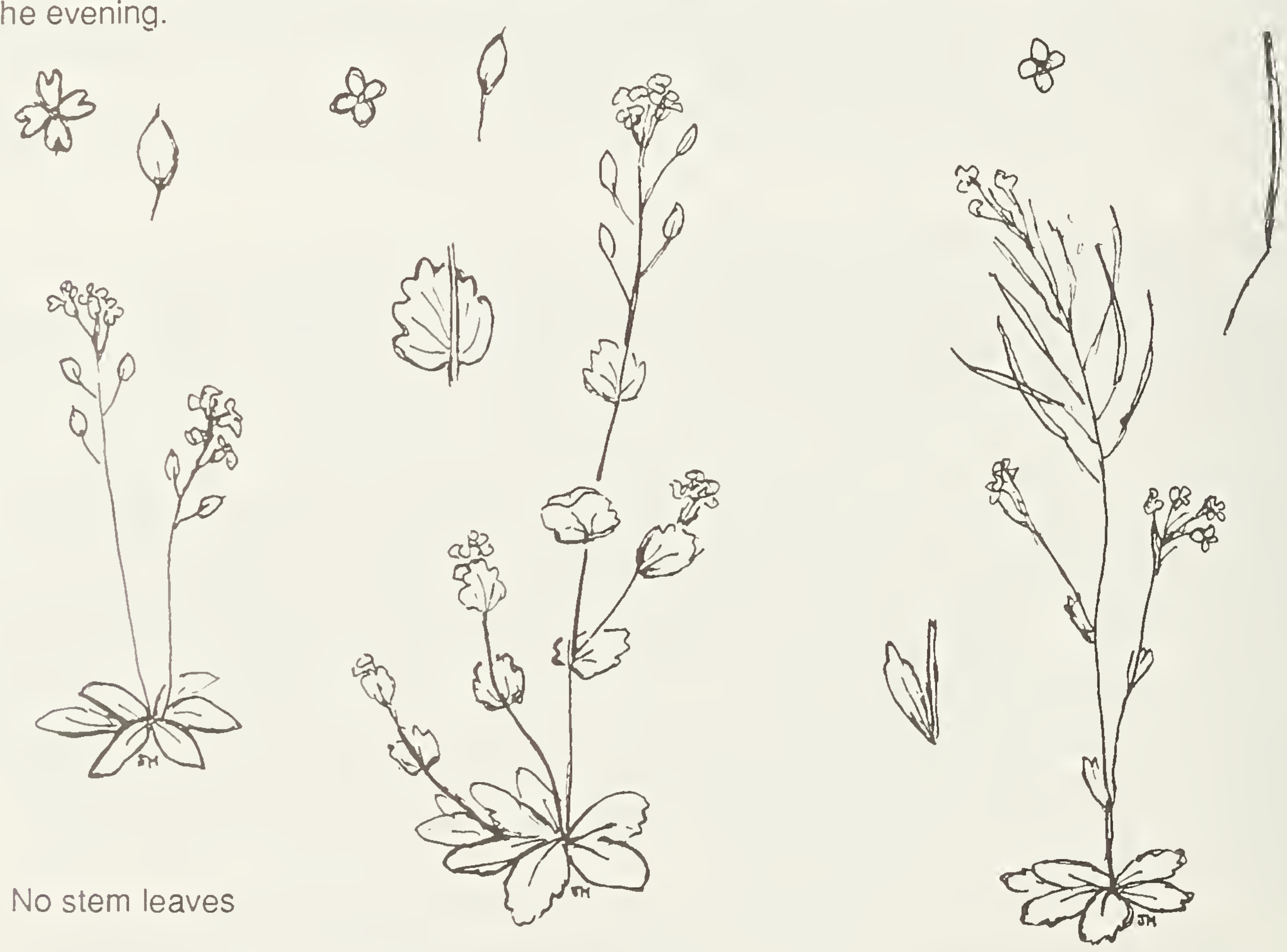
Another interesting alien to be found on the bing and canal bank is Intermediate Winter-cress (*Barbarea intermedia*). This plant seems to be particularly associated with the old industrial landscape, but is only to be found in modest quantities.

The undisturbed bank of the bing alongside the canal, and the whole of the bing to the north has a more "normal" vegetation - a good growth of trees (mainly birch and willow) on the flatter and more sheltered parts; "old railway-line" plants such as Moon Daisy (*Leucanthemum vulgare*), Hardhead (*Centaurea nigra*), Hawkweeds (*Hieracium* spp.), Strawberry (*Fragaria vesca*), Clovers (*Trifolium* spp.) and Vetches (*Vicia* spp.) on the more exposed places; and plants like Weld (*Reseda luteola*) and the occasional Mullein (*Verbascum thapsus*) on the drier, barer slopes.

After examining the lower slopes, some members of the party indulged in a little bing-mountaineering, while others preferred to argue about the plants coming up along the Union Canal. Marsh Marigold (*Caltha palustris*) and Lady's Smock (*Cardamine pratensis*) were in flower, but much of the remaining vegetation was only displaying leaves. This led to some argument. However, Reed Sweet-grass (*Glyceria maxima*), Reed Canary Grass (*Phalaris arundinacea*), Angelica (*Angelica sylvestris*), Codlins-and-Cream (*Epilobium hirsutum*), Meadowsweet (*Filipendula ulmaria*), Water Forget-me-not (*Myosotis scorpioides*), Water Mint (*Mentha aquatica*), Amphibious Bistort (*Polygonum amphibium*), and Brooklime (*Veronica beccabunga*) were all eventually identified. And an early flower of Large Bittercress (*Cardamine amara*) resolved contention before too much money had been staked on its identity!

Coots, Mallards and Moorhens were present on the canal, and the walk was terminated by a pair of Mute Swans who had taken up residence on the towpath, and built their nest on a bank of Sweet Cicely (*Myrrhis odorata*) outside the only human habitations for some miles. The cob was clearly in no mood to let us pass, and one of the locals assured us he had recently chased an old English sheepdog into the canal. We decided to give him best.

We returned by way of a small wood alongside the canal, where London Pride (*Saxifraga* x *urbium*) was well established amidst the native plants - Celandines (*Ranunculus ficaria*), Violets (*Viola riviniana*), a pale yellow bank of Primroses (*Primula vulgaris*) and considerable quantities of Sanicle (*Sanicula europaea*). Broad Buckler Fern (*Dryopteris dilatata*) was abundant, with smaller quantities of Male Fern (*Dryopteris filix-mas*) and Gold-scaled Male Fern (*Dryopteris affinis*). The discovery of Wood Millet (*Milium effusum*), a rarity in West Lothian, made a nice end to the evening.



No stem leaves

Erophila verna

Draba muralis

Arabidopsis thaliana

Draba muralis compared with some other small white cruciferous annuals.

J. Muscott

Dawyck Botanic Garden, Stobo, Peeblesshire - 14 May 1988

It was such a lovely day that many members were tempted out to Dawyck Arboretum, near Stobo, enjoying en route our countryside at its spring best. Dawyck is an outstation of the Royal Botanic Garden, Edinburgh and contains a fine collection of specimen trees, particularly conifers. The R.B.G is adding to the collection by planting trees and shrubs, mostly of known wild origin from throughout the world. Here I have quoted from the official leaflet. Dawyck was fortunate in the first instance to have a succession of three families - Veitch, Naesmyth and Balfour - who built up the collection with the help of three famous collectors, David Douglas, Ernest Henry Wilson and George Forrest, during three successive centuries of arboriculture. In 1979 Colonel Balfour gifted the Arboretum to the nation.

The big conifers are very impressive, particularly the Oregon Douglas Fir (*Pseudotsuga menziesii*) raised from seed sent home by David Douglas in 1834. There are also fine broad-leaved trees and of particular interest was the Dawyck beech with its upright branches like those of a poplar. There was also an oak growing in a similar fashion.

The Salmonberry (*Rubus spectabilis*), also introduced from North America, forms a shrubby undergrowth. There are large areas covered by an oak fern much taller than our native plants and with light green stems. Dr. Chris Page informed one of our members that it also was introduced from North America and he was delighted that it had caught our attention. We found the Pacific Sword Fern (*Polystichum munitum*), identified for us by one of the Arboretum staff.

Yellow Archangel (*Lamiastrum galeobdolon*) was a rarer species amongst the ground cover.

Birds included the Great Spotted Woodpecker (much evidence of its activity was seen on dead tree trunks), Redstart, Wood and Willow Warblers, Blackcap, Goldcrest, Treecreeper and Mistle Thrush. A handsome Grey Wagtail was observed gathering food around a pond area. Roe Deer and Grey Squirrel were seen though we didn't have any sightings of the Red Squirrel which we would have preferred.

A most enjoyable outing.

M. Robertson

Blackford Hill, Edinburgh - 18 May 1988

A pleasant evening walk with a good variety of habitats. Of added interest at this time of year were the birds nesting on the pond - a pair of Mute Swans on the island, and Coot and Mallard already with young hatched.

D. Mack

Rohallion Woods, Dunkeld - 21 May 1988

The sun of early summer shone kindly on the 24 members attending this meeting in the mixed woodlands of Rohallion. The woods cloak the western slopes of the Pass of Birnam where the Tay enters its lowland course. Mature Larch plantation dominates, but Western Hemlock, Douglas Fir, Spruces, Birch and Rowan are common. Cedar, Monkey Puzzle, Beech, Oaks, Rhododendrons and Cypresses have been planted near Rohallion Lodge, and Bracken, regrettably, fills any areas bereft of tree cover. The diversity of species of trees is matched by the flowers, ferns, mosses, birds and animals. Some 16 species of fern were identified, and Bugle (*Ajuga reptans*) and Chickweed Wintergreen (*Trientalis europaea*) were among the most common and attractive flowers. The birds and mammals remained fairly anonymous, but Buzzard, Chiffchaff, Blackcap and Jay were detected, and a Roe Deer, a recently-deceased Shrew, and a very long-deceased Fox were evidence of the mammal life of the area. The Speckled Yellow moth, much admired a few miles further north at this time last year, was found in smaller numbers.

Whether Macbeth ever drank his coffee at the King's Rock is debatable, but Duncan's Camp overlooks part of Birnam Wood toward distant Dunsinane, and Rohallion Castle may once have been more impressive than the roofless bothy that it now resembles. The presence of Parsley Fern in the wall is its main redeeming feature. The American Indians and bison, introduced in the nineteenth century, have gone the same way as the shrew and fox already mentioned. An interesting place, both past and present.

D. Adamson

Earnhill House, Forres - 27-30 May 1988

The raised expectations that precede the restaging of a successful event are often dashed. However, the ten members who travelled to Earnhill House in the spring to repeat the week-end excursion of 1987 were not disappointed as the company was just as convivial, the weather kinder and the 'finds' even more exciting.

Saturday, 28 May

On Saturday morning we returned to the Darnaway Visitor Centre and renewed our acquaintance with Vic Thompson the Ranger, who led our walk through the Darnaway Forest. The walk got off to a slow start - a worm of that variety to be precise and only the front half at that. No doubt after we had passed, the feast continued. As we meandered through the forest we saw a good selection of woodland plants such as the Common Dog Violet, Wood Sorrel, Wood Anemone, Chickweed Wintergreen etc., stopped innumerable times to admire the Speckled Wood butterflies sunning themselves on the path, and sent two Hares running for cover.

We learned about a stand of 150 Scots Pine on which detailed records are maintained and which have the unusual characteristic of smooth red bark to ground level instead of the more usual rough bark. These trees are used as a seed orchard and cuttings are also taken for propagation. The highlight of the day for the botanists was the discovery, after an inspired diversion down a steep slope from the path, of a group of Bird's-nest Orchids. Careful explanation to the non-botanists that these orchids were always found in leaf litter in the shade under Beech trees raised sceptical eyebrows a short time afterwards when a fine specimen was found growing in the open in the middle of the Land Rover track.

The ornithologists were well catered for too. Among the birds seen were Kestrel, Buzzard, Heron, Woodcock and young, Osprey, Wren and Oystercatcher. Mr. Thompson gave us two local names for the latter which although not scientific were colourful and descriptive respectively, viz. 'wallachie' and 'skirley wheeter'. We revisited the viewpoint from which we had surveyed the Osprey's nest last year and were pleased to find that once again it was in use and the bird on station.

Towards the end of the walk our pulses were sent racing partly through shock and partly through excitement when a female Capercaillie exploded from cover almost under our feet. She left behind a chick which lay absolutely still while she put on a diversionary display on the path ahead.

Mr. Thompson told us about several things which we did not see - Honey Buzzard, increased numbers of Badgers, young Peregrines practising stooping, and Twinflowers. These whetted the appetite and might well lead to a third visit to a very interesting locality.

Sunday, 29 May

We went in convoy to Garmouth the former mouth of the Spey where we met John Eddleston, local B.S.B.I. Recorder, who was to be our guide for the day. He had suggested Garmouth for its wide variety of coastal plants and especially for Bird's-foot (*Ornithopus perpusillus*), an uncommon plant of diminutive stature, the charm of which is in inverse proportion to its size. Its rarity is perhaps due to its size as it took the party some time to find despite fairly precise indications as to its location.

During the search for the Bird's-foot, an exciting find was made. One of the party found a group of three flowers which were identified as Coralroot Orchids (*Corallorhiza trifida*). That was of interest to John Eddleston as they were not previously known at that site. The icing on the cake was the discovery of two more clumps nearby - one of 2 plants and the other of 21.

While the botanists were having a field day, the ornithologists were treated to a five-minute spectacular of two Common Terns chasing a Cuckoo back and forwards along the beach. It is likely that the terns mistook the silhouette of the cuckoo for that of a hawk to which it bears a passing resemblance.

Other items of interest were the Eyelash fungus (*Scutellinia umbrarum*) and 15-foot-high Gorse, and one of frustration was the sighting of a moth which was very tentatively identified as Buff Arches but which flew off before a proper identification could be made.

On the way back to Forres we diverted to Loch Oire at Llanbryde where we were successful in sighting the Slavonian Grebe which is known to nest there.

Monday, 30 May

To round off the weekend we revisited the Culbin Sands Forest in search of Crested Tits. Despite walking for several hours the main party were disappointed but one member who had to leave early had a good sighting within 50 yards of the spot where we had parked our cars.

No new plants were added to the list for the weekend but some interesting fungi were found, most notable of which was *Boletus pinophilus* (*B. pinicola*).

D.C. Manson

Longniddry Bents, East Lothian - 1 June 1988

It is some time since we examined the flora of Longniddry Bents although we have studied the geology of the area quite recently. It is well known as the end of the old Cowslip Meadow, always of interest and often giving a few surprises. A good place to visit to sort out Veronicas, Forget-me-nots, Vetches, Mouse-ears, Chickweeds and Sandworts, not to mention the Crucifers, both white and yellow flowered, as well as the Pearlworts. Do come in June if you don't know the Bloody Cranesbill and come in July for the lovely Musk or Nodding Thistle.

We found a lot to tease our botanical knowledge and the Field Guides were consulted throughout the evening. Some of the botanical names have been changed several times which makes identification more complicated.

This year top soil has been brought in to repair worn patches in the parking areas, along with it have come weeds of cultivation, Hemp-nettles, Dead-nettles, Fumitories, Field Penny-cress (*Thlaspi arvense*) and Rape (*Brassica napus*). Perennial Cornflower (*Centaurea montana*) is now a well-established garden throw-out.

There is a small patch of salt marsh with the usual flora, you can here debate the difference between Sea Arrow-grass and Sea Plantain. In fact we only stopped our several discussions, consultations and debates when the light gave out. On the way to the cars we found Bar Chervil (*Anthriscus caucalis*), Lesser Meadow Rue (*Thalictrum minus*) and Burnet Rose. A Whitethroat grated his song from a patch of scrub. He had the last word!

M. Robertson

Twinlaw Cairns, Westruther - 4 June 1988

The Twinlaw Cairns are situated in the Lammermuir Hills, just north of the village of Westruther. On 4 June they were the focal point of the outing, attended by 15 members, when, for the record, the men outnumbered the women by two to one! The cairns were built to commemorate two brothers of the name of Edgar. A ballad relates how a Scots and a Saxon army each sent out their champion to do battle. The champions fought to the death, not knowing that they were brothers who had been parted in youth. The home of the Edgar family was Wedderlie House and it was there we commenced our walk.

During a stroll in the grounds, where we saw Salmonberry (*Rubus spectabilis*) with bright-pink flowers and trefoil leaves, we met the owner of Wedderlie. He was most interesting and informative. Afterwards we retraced our steps and headed for the farm. We crossed a stream and saw Brooklime (*Veronica beccabunga*), Wood Cranesbill (*Geranium sylvaticum*) and Green Alkanet (*Bentaglottis sempervirens*). In a strip of woodland there was a Noble Fir (*Abies procera*). Once onto the open moor, we heard the distinctive single-note call of the Golden Plover and during the outing had many excellent views of this bird. Also seen and heard were Skylarks, Lapwings and Red Grouse; a Cuckoo was heard in the distance. After lunch in the lee of a dyke, we reached the Cairns, from which we had a panoramic view. The Eildons, the Pentlands and even the sea at Pease Bay can be seen on a clear day.

The heather was still brown and where there were bare patches clumps of Deergrass (*Trichophorum cespitosum*) appeared. All around were the solitary white heads of Hare's-tail Cotton-grass (*Eriophorum vaginatum*). We were able to observe how a moor is managed for supporting grouse. The annual burning-off of old heather, called muirburn, is done in strips to provide new, young heather shoots on which the birds can feed. The older, rougher heather provides nesting sites.

On the way down our path coincided with part of the Southern Upland Way. We followed it as far as Dippie's Well, named after a keeper at nearby Rawburn Farm. From there it was back along the track to the waiting cars.

J. Lyburn

Dunglass Estate, Cockburnspath - 11 June 1988

It was disappointing to have a grey, misty morning after a beautiful sunny Friday and a promising weather forecast, but a party of 28 members nevertheless assembled at the East Lodge of Dunglass Estate. Chiffchaffs and Willow Warblers were singing as we set off, after admiring an old and very large specimen of the Strawberry Tree (*Arbutus unedo*) at the gates. Other estate plantings noticed along the drive included Lime, Holm Oak, Sweet Chestnut, Cherry, Deodar and Olearia. We spent some time looking through the Dunglass Collegiate Church, dating from the fifteenth century and with its roofing of huge stone slabs in a surprisingly good state of repair.

The road led past a small loch, overhung with trees and its surface part-covered by water-lilies and algae, but we were amused here by a Little Grebe which repeatedly 'submarined' with only its head above water. The vegetation so far had been largely 'meadow', whether grazed, mown or undisturbed, with plenty of Buttercup, Red Campion and remains of Primrose and Cowslip, but now we walked along rhododendron-bordered woodland, through a ferny glade containing bushes of Box and fine Lady and Male Ferns, and up the hill to 'French Camp' where among the trees were large ramparts from some long-ago battles. Near here, we admired a hexagonal stone summer-house which when built in 1714 would have commanded superb views over Dunglass Estate but which now hides, vandalised, in a Scots Pine plantation.

Some fine Beeches for shelter and short rabbit-cropped turf offered a good lunch area; a Coal-Tit's nest with parents feeding young was found in an ash-tree hole here. Further on, high ground and improving weather gave us some good views of Dunglass Dene, the imposing red sandstone cliff of Saltheugh Rock, and a binocular-sighting of a Badger sett on the far side of the deep valley. The path led us along the line of a very ancient hedgerow, with contorted remains of Elm, Hawthorn and Oak, in one of which we found a fine specimen of the Sulphur Polypore, the Chicken of the woods. Through conifer plantations and mixed woodland where we saw Sanicle, a plant indicative of continuous woodland cover over many years, we left the Estate at the hamlet of Bilsdean and cut under the railway and over the A1 road and walked down Bilsdean glen to the sea. The dene, which contains an attractive waterfall, is rich in ferns, noticeably the Hart's-tongue, some imposing plants of Angelica, and a pervading smell of garlic from the now-fading

Ramsoms. Fulmars were still nesting on the sandstone cliffs at the end of the dene, and birds seen as we walked along the beach towards Dunglass Dene included Heron and Shelduck. One member found a recently dead Mole which we examined with interest. A moth caught during the outing was later identified as a Beautiful Silver Y.

M. Watson

Faucheldean Bing, Winchburgh - 22 June 1988

I first visited this bing in 1987 while surveying for the Botanical Society of the British Isles, and was amazed at some of the plants which had colonised it. I was hoping the Natural History Society visit would extend the plant list and re-find some old records, as well as being of interest to members. I was not disappointed and I hope 'Nats' members enjoyed the trip too.

The last day of the Highland Show made for delays on the road, and a late start, but it was still a pleasant sunny evening when we embarked on the steep north-east face of the bing. At the foot an assortment of garden escapes are to be found, including a fine patch of Teasel (*Dipsacus fullonum*), and later in the year Pink Bindweed (*Calystegia pulchrum*).

Higher up we were soon hard put to it to avoid treading on one of our native orchids, Common Twayblade (*Listera ovata*), so numerous were the spikes. Both the Northern Marsh Orchid (*Dactylorhiza purpurella*) and Common Spotted Orchid (*Dactylorhiza fuchsii)* were also present, though in much smaller quantities, together with their hybrid, a robust and handsome plant, quite purple in colour but with give-away spotted leaves.

Ling (*Calluna vulgaris*) starts a bit below the flat summit, and at the heather-line we started looking for the single patch of Crowberry (*Empetrum nigrum*) which had been recorded in 1967 and not seen since. Not only did we find it - now spread over a somewhat larger area - but also a second site for Alpine Clubmoss (*Diphasiastrum alpinum*) which I had previously noted only at the west end of the bing.

This was a splendid start to the evening, and we were soon on the summit plateau which boasts large quantities of Stagshorn Clubmoss (*Lycopodium clavatum*), all in fine shape and fruiting vigorously. It is amazing to find these clubmosses on such a site and at such a low level - only 200-300 feet above sea level. (I must however get the *Diphasiastrum* checked, as another variety has recently been recorded in Britain.)

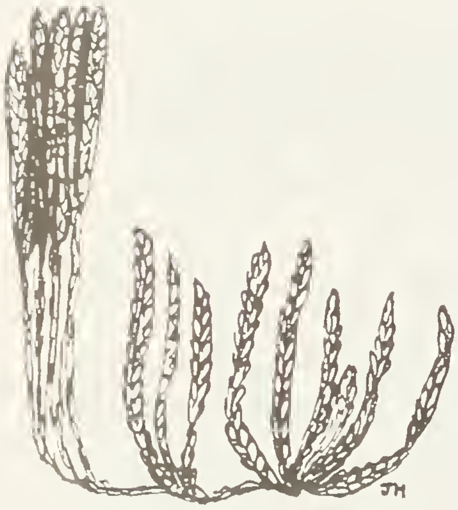
A patch of Bilberry (*Vaccinium myrtillus*), some Lemon-scented Fern (*Oreopteris limbosperma*), quantities of Heath Woodrush (*Luzula multiflora*), and Wavy Hair-grass (*Deschampsia flexuosa*) and Sweet Vernal Grass (*Anthoxanthum odoratum*) completed the moorland-type vegetation on the northern side of the bing. Broom (*Cytisus scoparius*), Bird's-foot Trefoil (*Lotus corniculatus*), Common Vetch (*Vicia sativa*), Yellow Rattle (*Rhinanthus minor*), Fairy Flax (*Linum catharticum*), Clovers (*Trifolium* spp.), more orchids (*Dactylorhiza* spp.), Early and Silver Hair-grass (*Aira praecox* and *A. caryophyllea*) are also to be found on the summit, while Hawkweeds (*Hieracium* spp.), Weld (*Reseda luteola*) and Moon Daisy (*Leucanthemum vulgare*) prefer the drier south-facing slopes.

The Niddry Burn runs below the bing to the north, and trees from beside the burn are spreading up the slopes. Silver Birch (*Betula pendula*) and Willows (mainly *Salix caprea*), seem to be the earliest colonisers, but Hawthorn (*Crataegus monogyna*), Sycamore (*Acer pseudoplatanus*) and Oak (*Quercus robur*) are also present, along with more exotic species like *Cotoneaster simonsii* and *Rhododendron ponticum.* Presumably the Cotoneaster like the Hawthorn and Blackberry (*Rubus fruticosus*) which is fairly abundant, are spread by birds.

These trees, while attractive, could pose a long-term threat to the heath-type vegetation. If the clubmosses are to be preserved some trees and shrubs may have to go - particularly the Rhododendron.

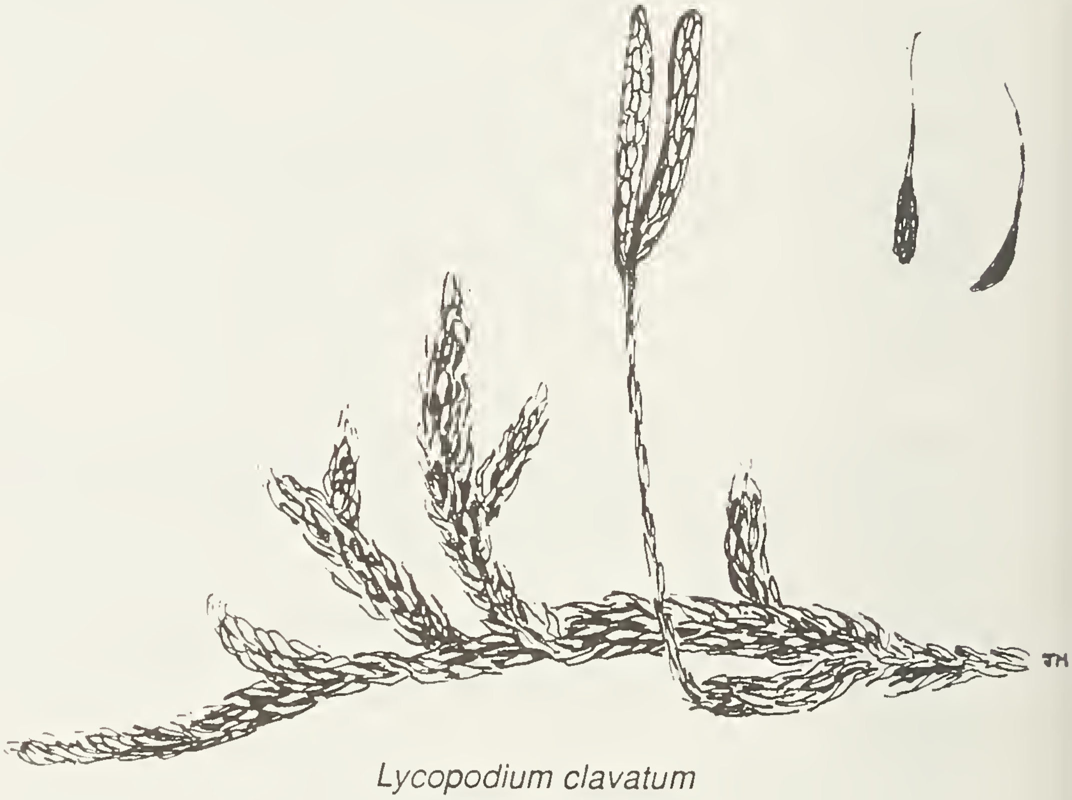
By the time we reached the west end of the bing the sun was low and the wind cold, so we were glad to descend and return along the road. More garden escapes were noted including masses of Lupins (*Lupinus polyphyllus*), while the Niddry Burn has been extensively colonised by the Spotted Deadnettle (*Lamium maculatum*) - which unhappily does not live up to its name, as none of the leaves seems to have any spots. Also during the return journey, bird-watchers noted Yellowhammers, Willow Warbler and Whitethroat.

I am hoping the bing will be listed either by the Nature Conservancy Council, or, more probably, the Scottish Wildlife Trust. Thanks to all who attended the meeting and helped to extend the list.



Looks like green string

Diphasiastrum alpinum
(Alpine Clubmoss)



Leaves have long white hairs (which distinguishes it from *Lycopodium annotinum*)

Lycopodium clavatum
(Stagshorn Clubmoss)

J. Muscott

North Merchiston Cemetery, Edinburgh - 13 July 1988

I don't think the cemetery is interesting enough to warrant another visit. The only flowers appeared to be the ubiquitous Willowherbs (Rosebay and Broad-leaved) and Creeping Buttercup. One patch of fungus was discovered, a *Psathyrella* species. A Meadow Brown butterfly was captured, examined and released.

D. Mack

Chatelherault Country Park, Hamilton - 16 July 1988

The outing to Chatelherault was well attended despite the rather dismal weather. It was a humid day of thick cloud and frequent showers. Mr. Jim Brockie, the Park Manager, met us at the visitor Centre and we had his enthusiastic guidance for the rest of the day.

He first gave us an illustrated talk on the history of the High Parks estate, which was created around Hamilton Palace in the 18th century, and the development of part of it as a country park. Briefly, the estate was sold in 1977 to help pay off the death-duties of the 14th Duke of Hamilton, and the Scottish Office bought the Chatelherault part of it, using a grant from the National Land Fund. The Historic Buildings and Monuments Branch of the Scottish Development Department restored Chatelherault Lodge, which was designed in 1732 for the fifth Duke by William Adam who, incidentally, referred to it in his drawings as the dog kennel! Both the Lodge and the country park are now managed by Hamilton District Council

We then moved on to the Centre's excellent exhibition, with tableaux giving an idea of the everyday lives of the people who worked on the estate two centuries ago - the masons, gardeners, farm-workers and coal-miners. This proved almost too interesting but eventually all the members were persuaded out of doors and the walk through the park began.

In a field below the house we were shown a small herd of white bullocks, descendants of a very ancient breed. The experts are divided as to the origin of the white cattle, some believing that they are descended from the prehistoric oxen that crossed from Europe by land before the North Sea was formed, others that their ancestors were brought over by the Romans. The main, mixed herd has been moved to the Duke's Haddington estate but it is hoped to build up another at Chatelherault in the future.

The White Cattle of Cadzow, as they are known, differ from the other well-known herd at Chillingham, Northumberland, in having a black muzzle and ears instead of the pink of the Chillingham beasts.

Our path took us by the Duke's Bridge over the Avon Gorge to the ruins of Cadzow Castle, a former stronghold of the Hamiltons, along Daurling Ride which skirts the old hunting area and on to the ancient oak wood, where we stopped for lunch.

These Pedunculate Oaks are of immense girth, and local legend associates their planting with David I of the 12th century. However, a dendrochronological study undertaken on one of them produced a date of 1444. Of the 300-odd trees remaining out of an original forest of probably 2,000, only eight are in Chatelherault park, the rest being on the land of a neighbouring farmer with whom there is a management agreement for their preservation.

We had lunch by the old fort nearby. This is thought to be of the Iron Age, although archaeologists are only now beginning to excavate it. We did not linger long, however, a heavy shower persuading us to our feet and into the woods.

Our way from this point was through a variety of woodland areas, broadleaved and coniferous. Sitka Spruce, Norway Spruce and Douglas Fir are grown commercially, and Mr. Brockie told us that, regrettably, an ancient yew wood had been taken out in the 1930s to make way for them.

There were interesting finds all along the way - a Badger sett among the conifers, a Chicken of the woods fungus (*Laetiporus sulphureus*) on an old oak stump and a fallen tree covered with hundreds of Fairies' Bonnets (*Coprinus disseminatus*), a delightful sight.

Enchanter's Nightshade (*Circaea lutetiana*) grew in profusion by the woodland paths and we also saw, amongst others, Broad-leaved Helleborine (*Epipactis helleborine*), Common Spotted Orchids (*Dactylorhiza fuchsii*), Agrimony (*Agrimonia eupatoria*), Hairy St. John's-wort (*Hypericum hirsutum*); and Giant Horsetails (*Equisetum telmateia*) - the ones we examined were about four feet tall but Mr. Brockie told us that six-footers are found in the park.

As we were nearing the house we passed a line of magnificent Giant Sequoias and further on, a Holm Oak, reputed to be the only one in Lanarkshire.

We finished the day with a visit to the Lodge to see the marvellous restoration work that has turned a virtual ruin into a handsome house again.

D. Mack

Lauriston Castle, Edinburgh - 20 July 1988

In the 18th and 19th centuries there was a great demand for ornamental trees and shrubs by owners of stately homes and large estates: indeed, there may have been some rivalry to introduce rare species to their parklands. At Lauriston Castle there are examples of these introductions notably the Japanese Cedar (*Cryptomeria japonica*) now well past their best, four Monkey-puzzles (*Araucaria araucana*), one Wellingtonia (*Sequoiadendron giganteum*), several Cedar of Lebanon (*Cedrus libani*), and one Deodar (*Cedrus deodara*). More unusual was the Coast Redwood (*Sequoia sempervirens*). This tree has lost its main trunk and is obviously quite old.

Among the broad-leaved trees we found Turkey Oak (*Quercus cerris*); and Silver Lime (*Tilia tormentosa*), the leaves of which are dense with silvery hairs on the underside. There is a magnificent healthy English Elm (*Ulmus procera*) well worth a photograph to show future generations.

Among the ornamentals is a splendid Strawberry tree (*Arbutus unedo*). Beside it grows the Silk-tassel bush (*Garrya elliptica*) with its glaucous leaves and attractive pendant flowers. A more uncommon Buddleia is *Buddleia longifolia*.

Escaping from the greenhouse was Mother-of-thousands (*Helxine seroida*). One plant of particular interest was Broad-leaved Helleborine (*Epipactis helleborine*), just surviving in the ivy cover at the woodland edge. Only two flower spikes were found.

It was a beautiful summer evening with lovely views across the Forth into Fife and beyond.

M. Robertson

Lindisfarne - 23 July 1988

The Lindisfarne National Nature Reserve covers an area of almost thirteen acres. In the winter it is of great ornithological interest as it acts as a refuge for approximately 60,000 wildfowl and waders including 25,000 Wigeon, 1,000 Brent Geese and 200 Whooper Swans. But it was not the bird-life but rather the interesting plants of the calcareous sand dunes that a full bus-load set off to visit at the end of July. Although the bus reached the causeway a good half hour before it was scheduled to be passable the waters parted without the aid of Moses and we were able to cross and make good use of the extra time. The weather which had been threatening during the journey brightened and, apart from one heavy shower, did nothing to interfere with our activities.

We had scarcely begun when we came on a flutter of Dark Green Fritillaries (*Argynnis aglaja*) feeding on the abundant heads of Creeping Thistle. At the same spot a sharp-eyed member found a Grove Snail (*Cepaea nemoralis*) which had just produced a clutch of eggs. We pressed on, our boots and socks soon covered in Pirri-pirri-burs (*Acaena anserinifolia*), but progress was slow because of the wealth of interesting plants found, including Grass of Parnassus (*Parnassia palustris*), Carline Thistle (*Carlina vulgaris*), Scarlet Pimpernel (*Anagallis arvensis*), Viper's Bugloss (*Echium vulgare*) and Felwort (*Gentianella amarella*).

Just after lunch excited cries summoned the party to admire the spectacular caterpillars of the insignificant Puss Moth (*Cerura vinula*). There were three in all on some small willow bushes. Nearby a Garden Tiger moth (*Arctia caja*) was seen - the first of several that day.

An early disappointment at finding only the rabbit-cropped remains of the Marsh Helleborine (*Epipactis palustris*) was later dispelled when they were found in profusion.

Although the island's main interest to ornithologists is in the winter one member who concentrated on the bird-life produced a list of some 37 species including Little Grebe, Shoveler, Ringed Plover, Turnstone and Sandwich and Arctic Terns.

Other items of interest found on the beaches of the two small bays on the far side of the island were fossils including the aptly-named St. Aidan's Beads.

D.C. Manson

River North Esk, Pentland Hills - 3- July 1988

Being soaked by two heavy downpours while still in the car park is not a very encouraging start to an outing, but it didn't lessen the enthusiasm of the 20 members who assembled at Carlops for the River North Esk walk led by geologist Bill Baird.

After telling us a bit about the history of Carlops, which was founded in 1784 as a weaving colony, Mr. Baird led us across the road to have a look at the Carlin-loups from which the village derives its name. This is a big outcrop of igneous rock at the side of the main road and legend has it that it is where the local carlins (witches) used to loup about in their high jinks. In more recent (and sober) times the rock has been quarried for road-work material.

We then headed up the track leading to Fairliehope Farm. At this point we were passing through an area of Old Red Sandstone sedimentary rock laid down about 350 million years ago. The Pentlands at that time, before ice and weathering had eroded them to their present level, would have been between five and eight thousand feet high. Pieces of red jasper were imbedded in the path, as were stones formed by a fine conglomerate with small pebbles and known as pudding-stone.

To the west of the path was a valley - the Windy Gowl. This had been a drainage channel for glacial meltwater. At full flood the torrent of water must have been an awesome sight because there is evidence that at times the combination of the great flow and the obstructions in the channel, such as lumps of ice and rock, forced the water to spill out of the valley and flow on to meet the Clyde, and even over the hills to the Tweed.

Further on we examined a bank of boulder-clay, or till - a mixture of stones, sand and debris deposited by the ice as it moved over the land, and also some banks showing Old Red Sandstone conglomerate in which the stones had been worn quite smooth by friction in the rivers before being laid down.

As we approached the North Esk Reservoir we passed on to older rock - Silurian - deposited 420 million years ago.

Skirting the reservoir on the eastern side we came to a formation where it was hoped to find the fossil *Dictyocarus ramseyii*. This fossil was originally described as a crustacean but it is now thought that it is more likely to be of algal material. Alas, despite our eager searching none was found.

Retracing our steps we joined the path leading up the western side of the reservoir and on to Deer Hope valley. By this time the sun was shining brightly and there was a refreshing south-westerly breeze: only the slithery mud underfoot reminded one of the morning rain. Curlews were calling as we walked up the valley and on the way two fungi were collected, a Slippery Jack (*Suillus luteus*) and a Giant Puffball (*Langermannia gigantea*).

We stopped at the Deer Hope coral bed for lunch and more fossilling. Here we discovered Corals, Sponges, Brachiopods, Crinoids, an Amphispongia and a Gastropod. The presence of the coral fossils indicated that this was once an area of shallow, warm, clear sea-water.

Moving up the valley we came to a hollow showing peat to a depth of about six feet. This hill peat, derived from sphagnum and rushes, would have started to form in the warm Atlantic period of about six thousand years ago. One small, slender fungus (unidentified) was found growing in the peat.

Leaving Deer Hope we climbed over the hill to Wetherlaw Linn and stopped at the burn to examine spheroidal weathering on the sedimentary rocks. This is caused by water action and, as the name suggests, results in circular markings on the stone. Two more formations were examined in this area and a Bryozoon and a fossil showing a complete Sponge on its side were discovered.

It was then back to the reservoir for a short refreshment stop, after which we crossed over to the eastern bank of the North Esk and made our way along a hill-track leading back to Carlops.

The sun was still shining gloriously at this stage, and a flock of chirruping House Martins and a clump of Ragged Robin by the path added to the pleasure of the walk back.

As we assembled at the car park to thank Mr. Baird for the day of enjoyment and enlightenment he had given us - it rained. The carlins, maybe?

D. Mack

Kilsyth - 6 August 1988

The party met at Colzium Lennox Estate, Kilsyth, where there is an attractive garden with all specimens name-tagged.

Cars were then taken to Dullatur Bridge over the Forth and Clyde Canal, from where the members were led westwards along the north bank of the canal. The geology of the area and the history of the construction of the canal were outlined. The next stage was to walk south along the B802 and thence to the Roman Fort at Bar Hill where a synopsis of the history of the construction of the Antonine Wall was delivered.

The return route was varied by coming back along the south bank of the canal, which has a very variable habitat - from basic spoil heaps to marsh to mature woodland.

Mute Swans and various passerines were seen and also a Moor Hen sitting on eggs in its nest which was supported on a clump of Spike Rush (*Eleocharis* sp.).

On the marshy area the differences between Floating Sweet-grass (*Glyceria fluitans*) and Small Sweet-grass (*G. declinata*) were demonstrated. Comparisons were also made between Rosebay Willowherb (*Chamerion angustifolium*), Great Willowherb (*Epilobium hirsutum*), Broad-leaved Willowherb (*E. montanum*), Marsh Willowherb (*E. palustre*) and Hoary Willowherb (*E. parviflorum*).

I. McCallum and D. Hunter

Rumbling Bridge, Dollar - 13 August 1988

After the heavy rains recently the waterfalls at Rumbling Bridge and the Mill Glen were seen to advantage. Both the River Devon and the Mill Burn were in full spate.

Twenty-two members explored the post-glacial gorge at Rumbling Bridge which was made by fast-moving melt-water cutting into softer rocks. The River Devon flows through the deep ravine which was hung with luxuriant ferns. A few late flowers still bloomed, Dippers and parties of Tits were seen, and a good collection of fungi gathered.

We travelled along the Ochil Fault to Tillicoultry and climbed 500 feet up the Mill Glen beside the burn, which fell down the steep hillside in a series of waterfalls. From the top we looked across the Clackmannan Plain and the River Forth to the Pentland Hills.

The Ochils have always been good sheep country with a cottage industry of spinning and weaving. After mechanisation the Burn was used to power eight mills in the village.

C. Stewart

Torness Power Station, Dunbar - 27 August 1988

The programme was divided into two very different parts. In the morning there was an indoor conducted tour of Torness Power Station and in the afternoon an outdoor walk along the shore and limestone cliffs beside the Power Station.

The number of visitors to Torness was restricted to twenty, a list of whom had to be submitted one week prior to the visit. After assembly and registration we were shown into a room where, on each chair, there were two leaflets entitled ‘Torness Power Station’ and ‘Here be no

Dragons', the latter a guide to the realities of nuclear power in Scotland. There was also a blue hard hat each which we were asked to wear at all times.

We were divided into two groups and set off on our tour of the awe-inspiring building and its contents. To quote the leaflet: "Torness has two reactor units and turbines installed in a single building complex with a central block for fuel handling, instrumentation and control room. Both reactors will be served by one fuelling machine weighing 1,200 tonnes and standing 31 metres high, operating within a common charge hall". We were taken, first, to this charge hall and stood looking down into it from a gallery high up near the roof. It is vast, like an aeroplane hanger and is 74 metres high. In it are the two reactors. How does the power station work? To quote the leaflet again: "Heat from nuclear fission is transferred from the fuel elements to the boilers by the coolant gas. Steam is produced in the boilers and is supplied to turbines at high temperatures and pressures. The turbines in turn, drive generators which produce electricity, as in a coal or oil-fired power station." The reactor cone is a 16-sided graphite stack containing 332 vertical fuel channels arranged on a square lattice.

We were shown one of these fuel rods. It is a large cylinder 9.5 metres long in which are 36 pins each containing 64 hollow pellets of enriched uranium dioxide, canned in stainless steel. Each pin cluster is contained within a graphite sleeve. Our next stop was the turbine house and from there to the control room. Again we were not allowed inside but observed it through a glass panel. There were three enormous desks on which were a myriad of controls. One was connected to Reactor I, the second to Reactor II and the third had a supervisory capacity. The walls were panelled with yet more dials, screens and knobs. Some things that were recognisable and meaningful were the many telephones. It was a most impressive display of technology. Only three people were in evidence.

On the way out, we passed men going off duty, who had to pass through booths where they were monitored for radioactive contamination.

Two hours after entering Torness, we emerged saturated with information and statistics and somewhat dazed with all we had seen.

In the afternoon sunshine, we roamed over the rocks and changed our attention from the very new to the very old - in the shape of fossils. We examined an abundance of crinoids. The flora was also interesting. Greater Bird's-foot Trefoil (*Lotus uliginosus*) and Lucerne (*Medicago sativa*), the latter widely cultivated as a protein feed and known in the USA as Alfalfa, were among the more unusual finds.

Our leader for the afternoon was Mrs. Margaret Watson and it was with a vote of thanks to her that we ended our day in and around Torness.

J. Lyburn

Cammo Park, Edinburgh - 3 September 1988

A large group of budding mycologists including a small number from the ENHS, gathered at Cammo on the western outskirts of Edinburgh to seek out the fungi. This estate was accepted by the National Trust for Scotland in 1978 and is now maintained as a public open space. The once-prolific high-walled garden boasted heated greenhouses and beehives as an integral part of its walls. The well-tended gardens are no more and the walls are now crumbling. The main house of the estate was destroyed by fire and the stable block with its interesting architectural features is also now derelict.

The estate is subject to a Woodland Management Plan which aims to provide a variety of trees combined with safe access for the public. In comparison with a similar fungal foray in September 1981 the vegetation was found to be coarser, with more of the ground covered by long grasses, nettles and willowherb. Fewer fungi, both in quantity and in species, were found than on the earlier visit. This was particularly noticeable along the borders of the main drive which was previously a very good site. It is not possible to attribute this seeming reduction in the fungi directly to the changing management since fungi are largely unpredictable and heavily dependent on recent weather conditions.

One of our first finds was a large tree trunk encrusted with *Hypoxylon fragiforme*. It was no surprise to find a species of *Armillaria*, the Honey-fungus. One large perfect *Amanita* was found growing next to a felled Elm and near to an Oak tree. It did not have a ring but had a distinct border to the bulbous base. The cap was quite pointed and retained dark flecks from the sheath. The edge of the cape was striate and there were 'snake' markings circling the stipe. It is suggested to be *Amanita submembranacea*.

We also found a large clump of orange-brown *Gymnopilus spectabilis* beside the Bughtlin Burn. On a neighbouring Beech stump there was a large mass of *Meripilus giganteus*. Each of these fungi is saprophytic and would be using the nutrients in the dead wood. On the death of the fungus these nutrients will have been converted and be ready for use by other plant life.

We assembled outside the ruins of Cammo House to lay out our finds. However, the explanation of their classification and identification was cut short by the weather and rainwear used as a base for displaying groups of associated fungi was hurriedly retrieved and put to more normal use.

E.McA. Smith

Fala Moor, Midlothian - 10 September 1988

Twenty members met at the appointed time and place in mild conditions for an interesting moorland walk that was new territory for most of those present. One member was concentrating on fungi; the others had general interest in botany and birds. To the east could be seen Soutra Aisle, scene for two seasons of a medical/archaeological excavation. We went off the metalled road, across the moor to visit the one remaining wall of Fala Luggie, which had every appearance of having been part of a tower house. We then crossed to Fala Flow Loch to look at Mallard and Tufted Duck. Remains of a young Lapwing and a Curlew suggested the presence of a Peregrine. Back on the road we went on towards Brothershiel Farm, noting on the way four Black Grouse. The route took us beyond the farm, uphill on a cart-track before turning, beyond a plantation, left to the Brothershiel Burn. We followed down the burn for no more than half a mile and then returned to our cars.

Lists of plants, birds and mammals have been deposited with the Records Secretary.

C.P. Rawcliffe.

Leithen Valley, Peeblesshire - 17 September 1988

Twenty-one members met in Innerleithen and drove in convoy to Leithen Lodge, where we parked the cars. Almost immediately at the start of the walk we came to a wet flush which provided some interesting flora, Grass of Parnassus (*Parnassia palustris*), Flea Sedge (*Carex pulicaris*), New Zealand Willowherb (*Epilobium brunnescens*) and Lesser Clubmoss (*Selaginella selaginoides*) being the most interesting.

To begin with the valley floor was quite broad but it narrowed progressively and the road turned into a stony track. At one pooint we saw three varieties of Horsetail growing close together, *Equisetum arvense, Equisetum palustre* and in the water, *Equisetum fluviatile*. A little further on was a lovely patch of white Burnet Saxifrage (*Pimpinella saxifraga*), yellow Autumn Hawkbit (*Leontodon autumnalis*) and blue Harebell (*Campanula rotundifolia*).

After lunch beside the water, the one and only hazard of the day was encountered, crossing the stream at a point where the track became a fairly wide ford. Fortunately upstream the river banks were steeper and the water narrower, so with the help of strong hands outstretched we all reached the other side safely.

About half a mile further on, the track began to climb up onto Lamb Law and here a few of the party turned back. As we climbed fairly steeply we saw at the side of the path Stag's Horn Clubmoss (*Lycopodium clavatum*). The sun came out and as we gained height we could see down into the valley and across to the surrounding hills. The Heather had nearly finished flowering, leaving just an odd patch of purple among the brown. The Blaeberries were ripe and juicy and very refreshing after our climb. We saw red Cowberries, black Crowberries and blue Blaeberries growing near each other.

We crossed from Lamb Law to Dunslair Heights and, in a trickle of water on the right-hand side of the track, found Hairy Stonecrop (*Sedum villosum*), a tiny pink flower with five petals, the only Stonecrop to be found in water.

At the radio mast we stopped to look at the view and pick out some landmarks. We could see the Pentlands and on the horizon to the south-west, Tinto.

From then on the path led downhill, at first through conifer woodland and then on open hillside. About an hour later, with the sun sinking slowly, and the shadows lengthening we reached the bridge over the river and in small groups retraced our steps to Leithen Lodge.

J. Lyburn

Dollar Glen, Clackmannanshire - 9 October 1988

Around forty people from ENHS and the British Mycological Society gathered at the foot of Dollar Glen, full of hope after a reasonable weather forecast. However, neither the weather nor the fungi came up to expectations, though it remained more or less dry, or only slightly drizzly. The path up the Glen was followed by everyone as far as Castle Campbell but, fungi being in rather short supply, there was nothing left to collect for those who brought up the rear!

After Castle Campbell the party continued to climb but were able to spread out and collecting improved. Several species of Hygrocybe were growing in the open grassland.

A relatively flat piece of grass beside the river made an excellent lunch spot but before long the drizzle increased and everyone was anxious to be on the move again. Some went higher to the old copper mine while others made their way back by a variety of routes through fields, by the golf course, over some moorland, or through the wooded glen.

At the end of the day specimens were laid out and identified in the car park. Owing to the large number of collectors and the wide area covered, more species were collected than had seemed likely at the beginning of the outing.

The Society is grateful to Dr. Brian Coppins and Mr. Alan Bennell for leading this outing.

E. Farquharson

Kindrogan, Perthshire - 29-30 October 1988

A group from the Society finished the season by attending the 'Autumn Walks' weekend course at Kindrogan Field Centre in Perthshire at the end of October. Earlier in the week all approaches to the Centre had been blocked by floods, and roads round the nearby village of Enochdhu had been under two feet of water. Not surprisingly, the going on walks was wet and those attending the course used long-jumping and rock-balancing techniques to negotiate the swollen streams. Fortunately, swimming skills were not tested!

The first day's walk took us past Loch Callater, just south of Braemar, via Jock's Road to Loch Kander which is at a height of 2,300 feet and has an estimated depth of 150 feet.

The covering of new snow on the hills highlighted the difference between the burnt heather areas and the mature growth. The young shoots provide food for grouse and the mature area shelter during the breeding season. Red Grouse were plentiful and on higher ground Ptarmigan were seen, already in their winter plumage.

A Dipper made its way up and down the burn but there was no sign of the hoped for Golden Eagle.

The last remnants of the season's flowers were one or two blooms of Bell Heather (*Erica cinerea*), Ling (*Calluna vulgaris*), Cowberry (*Vaccinium vitis-idaea*) and Alpine Lady's Mantle (*Alchemilla alpina*).

Fungi were scarce but the following were seen - Meadow Wax-cap (*Hygrocybe pratensis*), Crimson Wax-cap (*H. pumicera*), *H. langei* and species of *Galerina, Cystoderma* and *Nolanea.*

The party split into two groups on Sunday. One group walked over a hill track from Enochdhu to Spittal of Glenshee. The estate has recently changed hands and the new owners are planting large areas with trees. Care is being taken not to alter the distant view; there are some hardwoods as well as conifers and several ponds are being created. Nevertheless, what was for us a moorland walk will before long become a woodland one for much of its length.

There had been only an occasional Daisy (*Bellis perennis*) on the long ascent to the pass of An Lairig but by the path descending north to the Spittal, Lady's Mantle (*Alchemilla vulgaris*) and Alpine Lady's Mantle (*A. alpina*) still had some blooms and there was Yellow Mountain Saxifrage (*Saxifraga aizoides*) in profusion although all its flowers were past.

The second group did a circular walk through varied habitats: by the river to see the effect of the recent floods, across a grassy area, and climbing through the woods to the top of Kindrogan Hill. The day was clear and views in all directions were magnificent, from the Lomond Hills in the south to the snow-covered Grampians to the north, and Beinn a'Ghlò only a few miles away completely white from moor level to summit.

The walk was fairly long and rough and there was not much time to search for fungi. However, the strong smelling, blue-green *Clitocybe odora* was seen as was *Tricholomopsis rutilans* (the plums and custard fungus).

High tea at the Centre concluded a most enjoyable weekend and we drove off into the gathering dark resolving to return next year.

M. Clarkson

Musselburgh Lagoons and Aberlady - 19 November 1988

Because of the exceptionally wide variety of birds always to be seen on this double outing and the fact that they can be observed at such close quarters, this outing fully justifies itself for inclusion on winter programmes. It is generally regarded as the best bird walk in the Lothians, not so much because of seeing any rare or unusual species but because of the huge volume of wintering waders, duck and geese always seen - on this outing nine species of wader and eight species of duck were seen.

November (or early to mid December) is the best time for the outing as geese numbers tend to decline in the New Year.

Seventeen Whooper Swans were seen flying in to roost by Kilspindie shoreline. An estimated 4,000 Pink-footed Geese were coming down into Aberlady Bay for their nightly roost. Exceptionally good views were had of a large flock of Golden Plover at Musselburgh and of Wigeon at Kilspindie.

C. Pountain

DONATED FUNDS MANAGEMENT COMMITTEE

When money was bequeathed to the Society in 1976 in the form of the Sime Bequest followed in 1981 by the Gunn Bequest, committees of Society members were appointed to supervise these funds.

The more recent Robertson and Walker donations now mean that the Society has four funds and a single Donated Funds Management Committee has been appointed to oversee them all.

Initially the Committee comprises

Mr D. Manson : President (to represent the Gunn Fund)
Mrs. C. Stewart : Secretary (to represent the Walker Fund)
Mrs B. Gill : Treasurer
Mrs N. Henderson : (to represent the Robertson Fund)
Mr. D. Gill : (to represent the Sime Fund)

Any enquiries or proposals for the use of these funds should be put to any member of this committee. It is felt that so far as possible funds should be used to extend the cause of or the study of natural history, with some donors expressing a wish that young people should be given preference.

Uses to which funds have been put so far include:

- the provision of financial support for members attending courses at Field Centres, such as Kindrogan;
- a prize for a schoolchildren's competition at the Royal Museum of Scotland;
- financial support for field survey work by members;
- printing of photographs in the Journal;
- the acquisition of books for the Society library;
- the acquisition of equipment such as telescope and microscope, for the use of members.

NOTE TO CONTRIBUTORS

It would ease production of the Journal if contributors would adopt as many as possible of these guidelines:

- type or write clearly on one side of paper;
- use A4 size paper;
- leave alternate lines blank for editing;
- leave one clear margin;
- give English name of subject followed by Latin name;
- identify location of excursions by place names or OS map reference.

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EDITORIAL

This issue of the Journal brings it up to 25 years since the publication was initiated as a Newsletter in 1965 by Mr Michael Usher. It is pleasing to be able to record that the Society continues to conduct a full programme of outdoor and indoor meetings which are well supported.

A major aim of the Journal is to act as an annual record of the various activities of the Society. Records are also kept of natural history observations made on outings and these along with individual observations provided by members can act as a guide to readers as to what to look out for at any particular time of year or locality.

Another function of the Journal is to provide a platform for the publication of articles on natural history topics and contributions of this sort are always welcome. These can often reflect a person's particular subject interest, hobby, holiday experience or participation in a natural history field course.

I would like to express appreciation of the members of the Journal committee who over recent years have worked assiduously in the preparation of each annual edition.

WINTER INDOOR MEETINGS - 1989

January: Two speakers shared the first lecture of 1989: Dr. Olive Hilliard, formerly an associate professor at Natal University; and Mr. B.L. Burt, of Edinburgh's Royal Botanic Garden. They had been introduced to us by Dr. Peggy Hobson and it was much regretted that she was no longer here to enjoy the evening with us.

Dr. Hilliard began by showing where the Drakensberg lay and how it had been formed. This great escarpment forms the boundary between Lesotho and Natal and sweeps from sea-level to its crest of over 10,000 feet. Eastwards it is incised by deep gorges with spurs of mountain terrain between. Westward is a high plateau. The edge of the escarpment is a wall of basalt with layers of cave sandstone underlying it. The only route into Lesotho is by the road over the Sani Pass. The original inhabitants, the Kalahari Bushmen were hunter-gatherers, fleet of foot and keen of sight. On the walls of caves are found lovely paintings of oxen, herds of eland and troops of baboons and drawings of themselves and their activities. In this area was found a lovely green chameleon and many very vocal frogs. Cape vultures and the rare lammergeier were seen, and the curious secretary bird, ground-living but capable of flight, is present. The jackal buzzard and the malachite sunbird, which pollinates flowers, are also found.

Mr. Burt spoke of the flowers of the area, some of which are familiar to us and others not. The crocus which blooms in the spring after a very dry winter, is really an iris. There is also a relative of our daffodil, *Cartanthus*, some red, some yellow and some epiphytic. The juice of the squill, *Scilla drach montana*, is used by the Zulu as a cleansing agent. Many varieties of geranium are found here and may reach five feet in height. Here, too, some Umbelliferae grow as trees. A representative of the pea family, *Sutherlandia montana*, grows as a shrub of six to seven feet. This plant is named in honour of the first Superintendent of the Edinburgh Botanic Garden. A plant which we all associate with South Africa, the *Protea*, grows here. Its habit of life is related to its ability to survive fire, lightning-strikes and rock falls. Nearly half the flowering plants of the area belong to the daisy family especially the genus Helichrysum. One of these, *H. melfordii*, may be seen at the scree in the Royal Botanic Garden.

February: Mr. Bill Baird from the Royal Museum of Scotland spoke on 'Landscape and Rocks'.

The factors underlying the general principles of geology are simple - gravity and weather. A map produced by the Geological Survey shows over a hundred different types of rocks, and the geology of Scotland is so complex that many foreign visitors come to study here.

Scotland can be divided into four geographical areas.

(1) The North-west Highlands of Lewisian and Torridonian rocks.
(2) East of the Moine Thrust are the Northern and Central Highlands. The rocks here are not so old, Moine, Dalradian and Old Red Sandstone.
(3) Between the Highland Boundary Fault and the Southern Uplands Fault is a rift valley once full of active volcanoes and this forms the Central Lowlands.
(4) The Southern Uplands are of Silurian and Ordovician rocks with granite intrusions.

The speaker likened plate tectonics to the surface of a badly stirred porridge pot where the continents are the thick skin. Boiling porridge bubbles up into the area between the bits of skin which gradually float apart. This could be compared with volcanism at the mid oceanic ridges where the ocean floor is created and begins to spread.

In Tertiary times there were volcanic centres in Skye, Mull and Arran and the lines radiating out from them are dykes. Hertabred in Iceland may be a Tertiary volcano and this may be what Mull was once like.

During the Ice Age most of Britain was several kilometres deep under the ice. Ice rubs debris over the land surface and grinds it whilst the weight of ice depresses it. An illustration of Antarctica where some peaks stand above the ice level showed what some parts of Scotland, especially Aberdeenshire, may have looked like during the Ice Age. Ice, on melting, left till which covers much of the landscape and masks what lies beneath. Rias were formed when land, depressed by the ice, did not rise and became flooded by the sea. Ice cut the gorge of Corrieshalloch and it was cut deep as the ice melted and debris like liquid sandpaper ran off. The U-shaped valley of the Russel burn was cut by ice and at the north-east coast of Skye great landslips occurred where melting ice left the cliffs unsupported, the remaining rock not being strong enough to bear the weight of the rocks above. The characteristic profile of the Old Man of Storr resulted and the road is still liable to subsidence. The parallel roads of Glen Roy were formed by a suddenly draining lake which was ice-impounded.

Different kinds of rock produce characteristic features of the Scottish landscape, for example: Fingal's Cave with columns formed by slowly cooling lava; Smoo Cave formed by acid water flowing underground through limestone; Macleod's Tables formed by horizontally bedded Tertiary lavas and Arthur's Seat and Salisbury Crags which provide a marvellous textbook, with agglomerate, basalt columns and sills.

March: Dr. Peter Maitland's subject was the conservation of British fish. His main interest is in the fresh waters of Scotland. During the Ice Age Scotland was covered by a great mass of ice. Once the ice cleared there was left a myriad of lakes and rivers.

During the nineteenth century, Sir John Murray suggested there should be a survey of the larger lochs but it was found to be difficult to obtain funds. So in 1897 Murray set out to accomplish the task with one assistant, Mr. Laurence Pullar. When around fifteen to twenty lochs had been surveyed, and while Murray was abroad, the assistant was drowned and Murray decided to end the work. However, the father of Mr. Pullar made a gift of £10,000 and Murray relented. Today there is a memorial stone at Logie Loch and a six-volume work dedicated and entitled *The Bathymetric Survey of the Lochs of Scotland*. It is now a very valuable work. The largest loch in Scotland, by surface area, is Loch Lomond; by depth, Loch Morar; by volume, Loch Ness, by reason of its high mean depth. Scotland is rich in good running waters. The Tay is the largest river, by flow, in the United Kingdom.

When looking at lochs the water is sampled at different depths and analysed because the chemistry is important. Wind conditions are also important because this drives the water, creates circulation and equalises temperature thus affecting the food cycle. Light measurement is also important as light affects plant life, e.g. water weeds and marginals on the shores, algae growing at the surface for browsing creatures such as limpets and free-floating algae as food for phyto-plankton. Plankton is an important part of the food pyramid as it is used by the small crustaceans which are fed on by fish. Also found in the water are the larvae of the caddis fly. These spin a net in the water to catch food. Other larvae, e.g. the 'dancing midge', are widespread in the aquatic habitat. The non-biting midge larvae change into pupae and fish feed on these as they rise to the surface. The 'rise' is important to trout.

At the melting of the ice-cap there were no fish in Scotland, yet of the fifty-five species in England forty are now found in Scotland. Some came by sea. The flounder, trout, char and salmon all have a marine episode in their life-cycle. The successful perch lays its eggs in shallow water amongst the weeds and these may have been moved by water-fowl or on the feet of herons. Fish rain, occurring during some weather conditions, could also have spread eggs. The minnow, loach and bullhead were probably moved by humans. Rainbow trout brought from North America to form the stock for fish-farming, is a classic example of this.

Fish encounter problems of survival. Pollution, barriers such as dams, and acid rain all affect the life-cycle. Anglers probably do not deplete stocks by fishing; but stocking by introduced species, which may become predators, has dangers. Salmon are important in Scotland and are found in around four hundred of its rivers. The farming of salmon has grown as an industry and has brought many benefits. There are also problems, e.g. faecal material deposits and escapes of farmed fish. Millions may escape at a time and give rise to the risk of disease. In Norway a minute fluke has attacked salmon and this population had to be wiped out and the fisheries restocked.

In the field of conservation and in the education of the public the Americans are in advance of us. Forty-three of our species of fish are native to our waters and need protection. The barbel is now extinct in Great Britain. Houting has become rare. Sturgeon, once common, now breeds in only a few rivers in France and Spain. Shad, a member of the herring family, is now rare and breeds only in the Severn and perhaps the Solway. Smelt, which spawns in fresh water, was common once in the Forth but is now found only in the Tay and the Cree and the speaker has a project to try to restore them to the Forth. The Arctic char was once present in Loch Rannoch but has been lost through acidification. In Loch Doon the char is still found but acidification here is increasing and eggs have been taken to hatcheries. It is hoped to stock the newly created waters at Talla and Megget. This would create new populations. The rarest fish in fresh water is the vendace. It is thought to be present in the waters of Lakes Bassenthwaite and Derwentwater. It is difficult to release fish from hatcheries because of angling interests which in Scotland are geared to game fish.

April - Member's Night: The first contributor of the evening was Miss Elsie Duff who showed us her lovely slides made on an energetic visit to Sabah in Borneo. She visited the Kimabalu National Park and walked up Mount Kimabalu to the rest house at 11,000 feet. She showed us pictures of the exotic flora, including a yellow rhododendron, and fine views on the mountain.

Mrs. Sheila Litteljohn introduced the photographs and slides taken by herself, Mrs. Connie Stewart and Mrs. Helen Miller on a visit to western Canada. They travelled from Calgary to Banff and the Kicking Horse Pass. Lake Louise was visited and then they travelled on to Jasper and Vancouver by the Yellow Hat Pass. At Vancouver they were able to go on to the Pacific Rim on Victoria. We saw the great forests with the towering trees and some of the lumber work. Mrs. Litteljohn also visited Toronto and had some fine views of the bright autumn colouring of this part of Canada. The party made available their lovely collection of photographs.

Miss Phyllis Hamilton then showed us her slides taken in Greece and Crete, and spoke of her travels there. The best time to visit to see the flowers was from April to June. She started in Athens at the Acropolis and went on to show something of ordinary life in the countryside and of the characteristic flowers of Greece. She had also walked in the great gorge in Crete.

We returned to a more familiar scene when Miss Margaret Mitchell introduced her slides from Sutherland and Tentsmuir. She reminded us of the plants which grow around our lochans and on the moors, such as the uncommon Royal Fern and the more familiar Sundew, Trollius, Roseroot, Thrift and, from Inchnadamph, *Dryas octopetala*.

Mrs. Kathleen Manson's slides were shown to us by Mrs. Eunice Smith. They had been taken in May on a visit, with members of the Edinburgh Natural History Society, to the countryside around Forres. They visited Darnaway Forest with its mature woodland, a good fungus habitat. They found a spurge which is sweet but poisonous and may be a natural deterrent to moles. Bird's-nest Orchid and Coral-root Orchid were found. A visit to Culbin Forest revealed spectacularly tall-growing common broom.

A group of splendid slides came from Mrs. Ena Gillespie. There were moths and other insects and an unusual one of a golden-yellow slime mould.

The colourful, exotic bird-life of the Gambia was brought to us by Mr. Bob Smith. Mr. and Mrs. Smith stayed at a fine-looking hotel adjacent to a now famous nature reserve set up by the Gambian government to protect their wild-life. They visited just after the rains and obtained a collection of slides of the colourful and interesting birds resident in Gambia at that season.

October: Following the Annual General Meeting, Miss E.M.M. Duff spoke to us and showed us her slides of a visit to the Far East, to Java. She travelled first to Singapore and was welcomed with flowers. There, in this clean, modern city with its green open flower-filled spaces, she visited Raffles Hotel.

She then flew on to Jakarta, capital of Indonesia. There she visited the Botanic Gardens at Bognor, saw the lake with its water lilies and dragonflies, and among the fine trees she saw tiger, giraffe, rhino and lion with cubs. In the countryside are tea plantations with poinsettias and fields of rice ready to harvest. Rice, sago and cloves were spread to dry along the road verges. Rice husks are used to fire the kilns for baking bricks from the local clay.

Java has a very ancient society dating from the time of Java man. There are some three hundred ethnic groups living together. The land was once settled by the Portuguese, then the Dutch, British and Japanese. The Javanese then fought for and gained independence. In the uplands there is an area of active and sulphurous volcanoes and lovely valleys growing tobacco.

At Jogjakarta is the Sultan's palace. A range of handicrafts is set out for sale in the streets. Nearby the great sanctuary of Borobudur was seen. Its ten terraces and temples are intricately carved with the events of the life of Buddha. Horse transport and rickshaws are seen in the streets lined with lovely gardens and beautiful orchids. Miss Duff climbed to the crater of an active volcano, a place much visited by the local people to watch the sun rise. On the way she photographed people at work in the fields, a lovely dahlia, the local fishing boats making a beautiful pattern and the egrets, one of the few birds seen, in the fields.

November: Mr. Sydney Clarke of the Royal Botanic Garden spoke on the Plants of the Alps and Dolomites. He had revisited the area after an absence of twenty years "to see old friends and to make new ones". He had chosen different geological and geographical areas, the Vorarlberg limestone, acid rock areas near the Swiss border, the Stubaital and the Dolomites.

The Bregenzerwald has scenery of open meadows and mixed forest. The lower pastures are cropped for hay which is full of meadow flowers. On the upper slopes are found wild Berberis and whorled Solomon's seal. Wetter areas and in the shade grow goat's-beard, monk's-hood and Martagon lily. The short turf, grazed by sheep, provides rusty backed alpenrose, *Gentiana verna* and *Primula elatior.* By streams and lakes great swathes of trolius and *Ranunculus aconitifolium* may be seen.

High in the mountains of Vorarlberg, *Crocus albiflorus* is an early comer as the snow melts. On the rocky outcrops are found baneberry and bird's-eye primrose. These may also be encountered in the north of England. Growing through the patches of snow is also the delicate *Soldanella alpina.* Exclusive to the limestone areas is the *Primula auricula* and the white alpine pasque flower.

Most gentians, except for *Gentiana verna* and *Gentiana clusii* which are lime tolerant, prefer acid soil. The spotted gentian and great yellow gentian, which may grow as tall as five feet, grow in the more acid meadows near the Swiss border. At eight thousand feet with a watershed climate were found *Anemone narcissiflora* and the highly protected *Daphne neorum.* The yellow foxglove, alpine clover and *Gentiana acaulis* are all acid soil indicators.

The roads through the Otztal and over the pass beyond Obergurgl have been vastly improved. The meadows are gay with flowers including the sword leafed helleborine, found in West Scotland, the red Helleborine, also in Gloucestershire, and Lady's-slipper of which only three plants are known to be in Great Britain. At the border with Italy the vanilla scented orchid, the least primula and *Lloydia serotina*, an indicator of a recent glaciated valley, were present. Cushions of *Silene acaulis* and *Loiseluria procumbens*, both of which grow in Scotland, were in bloom. Along the mountain sides masses of alpenrose were in bloom.

Into the Dolomites, with its very spectacular scenery, to find *Lilium bulbiflorum* in bloom and enjoy the colour of pink soapwort and alpine toadflax. Here too he found the shy and easily overlooked *Rhodothamnus chamaecistus* and the frilly least snowbell.

Mr. Clarke showed a large collection of beautiful alpine flowers on his slides and answered questions.

December: Dr. Roy Watling had chosen the topic 'Sand-dune Mushrooming' because most people might think that in this habitat fungi would be few and not very interesting. He brought with him some lovely watercolours of fungi found in the dunes around Aberystwyth. These same fungi are also found in Scotland.

In the geology of Scotland rocks range widely in age and all areas have sand-dunes. Temperature and climate differ from area to area and these conditions are reflected in the vegetation. The character of dunes varies from the willow forming thickets at Aberystwyth, the dunes of Strath Naver which lie on a raised beach and the dunes at Farr Bay which are six to seven thousand years old and are of the grassland type.

The fungi of the dunes do not form a static community. Dunes are poor in nutrients but they are fed locally, for example by nitrates which come from rabbit droppings. Rabbits deposit in specific sites, often under marram grass and droplets of moisture from this vegetation are important as dunes are a very dry habitat. Fairy rings have been found at Skara Brae and puffballs may have been used by the inhabitants to stem bleeding. Tulostoma are found at Aberlady and Geasters (earth stars) at Gullane.

In podsol areas hygrophorus, similar to what appears on ill-kept lawns, are found. On calcareous dunes in Scotland and in willow thickets in Denmark lepiota are found. Leaves, branches and stumps in willow thicket give rise to a variety of fungi, many of them saprophitic and associated with larger fungi. *Salix repens* always has fungi on its roots. The tree has no root hairs as these have been sacrificed in favour of mycorrhiza which are very efficient at collecting nutrients. Man has also added exotics to this habitat as, for example, pine trees at Culbin with its associate Suilus fungus. These are alien to our system and native to North America.

In Queensland, Australia, there is a coastal sandmass in a high rainfall area. Cooloola dunes changed botanists' views on vegetation. There are here dunes of different types and ages. Near the sea the front line of dunes receives nutrients from the sea-spray such as magnesium, potash and calcium. A thorny grass develops and further in shrubs and small trees, often of the nitrogen fixing family Leguminosa. Over the ridges of the dunes may be found bracken and eucalyptus. Some of the fungi found here are also found in Europe especially those which grow on our coal tips and mineral heaps. Rainforest develops in the deeper valleys as the dunes grow in size away from the sea. The biggest forest trees grow on the middle-aged dunes and fungi are important for obtaining nutrients for their growth. Saprophytes, mycenas and boletus are found here. Furthest inland are the oldest dunes and here plant growth passes beyond the climax vegetation stage and grows progressively more stunted because nutrients are no longer available.

Dr. Watling accompanied his talk with many slides of habitat and fungi.

V. McFarland

FORESTRY IN THE LOTHIANS

Much of Lothian's present landscape originates from the era of land improvement during the 18th and 19th centuries. Through the vision of the great improvers of the day the open, windswept, and largely treeless landscape of the Lothians was transformed by the planting of shelter belts, woodlands, and policies, on both the newly formed and the older estates.

The landscape that we thus enjoy is a fairly new one in terms of its creation and precious little of it pre-dates the influence of those that have held the land over the last three hundred years. Indeed, relict ancient woodland in the region is a very rare habitat type. The intensive farming practices over many hundreds of years around Edinburgh led to the clearance of all woodlands from the productive land areas. Only those ancient woods in steep-sided river valleys, such as Roslin Glen and Woodhall Dean, both SWT nature reserves, now remain as examples of what once covered Lothian.

That is disturbing in itself but we must also be aware that the tree landscape of the region is an ageing one and one of the major problems awaiting us is the disappearance of this inheritance through neglect and non-replacement, as the old trees are gradually lost. Where there is tree planting then we must also consider that styles have changed over the years. Therefore the character of the landscape as it is today may well differ in the future as hedgerow trees, shelter belts in the lowlands, and policy plantings make way for tree features designed for present needs and purposes.

When taking this type of overview it also becomes apparent that large-scale commercial forestry is not a particularly important feature in the region's countryside. In the past, various factors have worked against such planting whereas in other parts of Scotland the amount of coniferous forestry has raised many issues.

Climatically, certainly in the east of the region, Lothian has been regarded as being too dry. The consequence is that the growth rate of the trees is slower than say trees planted in the west, and so the commercial return is less over the same period of years. Where there is a higher rainfall at the western end of the region then in the past pollution has been a restricting factor.

Certainly, cross-sections of old pines growing in the area show a significantly lower annual growth increment at the turn of the century, with an increase in more recent years as smoke control and other anti-pollution measures have been introduced. However, even if this factor is removed the area still suffers highly by being an urban fringe environment with vandalism being at its worst in the form of fire.

These influences apart, much of the Lammermuir, Moorfoot and Pentland Hills are well managed and jealously guarded as grouse moor. This, plus the higher land values for good sheep grazing on such moors, has also meant that in these uplands land prices have been far beyond what forestry interests were prepared to pay.

As a consequence, commercial forestry has not been seen as a competing land use until quite recently, when the downturn in the agricultural economy resulted in some upland farmers selling off their less productive land. The amount of land that then came onto the market reduced prices and suddenly forestry was beginning to become an issue in Lothian, as elsewhere in the country.

The Government's budget of 1988 burst the bubble. No longer were there to be tax incentives for investing in commercial forestry, and immediately interest ceased. In fact no large-scale planting has taken place in the region since, and this reflects very much the national situation in which large-scale tree-planting has slowed down considerably.

Confidence will return in due course and this fact must be faced. However, the present situation gives us a breathing-space. Various regional authorities are thus assessing the need for forestry plans which will indicate where forestry might be encouraged in the future without creating conservation or other land-use conflicts. Such advice is useful to the forester as well as to the local planning authority. In the past conflict of interests has certainly arisen because at the outset the information has been inadequate and competing land-use interests have created many unfortunate planning battles.

Such a gathering of information has been started for the Pentland Hills. Now a Regional Park, the Pentlands have never been an area for significant commercial afforestation. That must not make us complacent and for this reason it is important that we now look at the hill range in terms of where forestry proposals could cause wild-life conservation, landscape, or land-use conflicts. But, to be more positive, commercial forestry can also provide a significant wild-life contribution and with a greater understanding of how, by design, large blocks of forestry can be created which are more 'wild-life friendly', then in the right place forestry could be made to make an important additional habitat in the Regional Park. After all, the Pentlands are generally devoid of trees and with a history of habitat impoverishment through centuries of intensive farming the scope for habitat improvement and creation is significant.

THE GUNN PHOTOGRAPHIC COMPETITION 1989

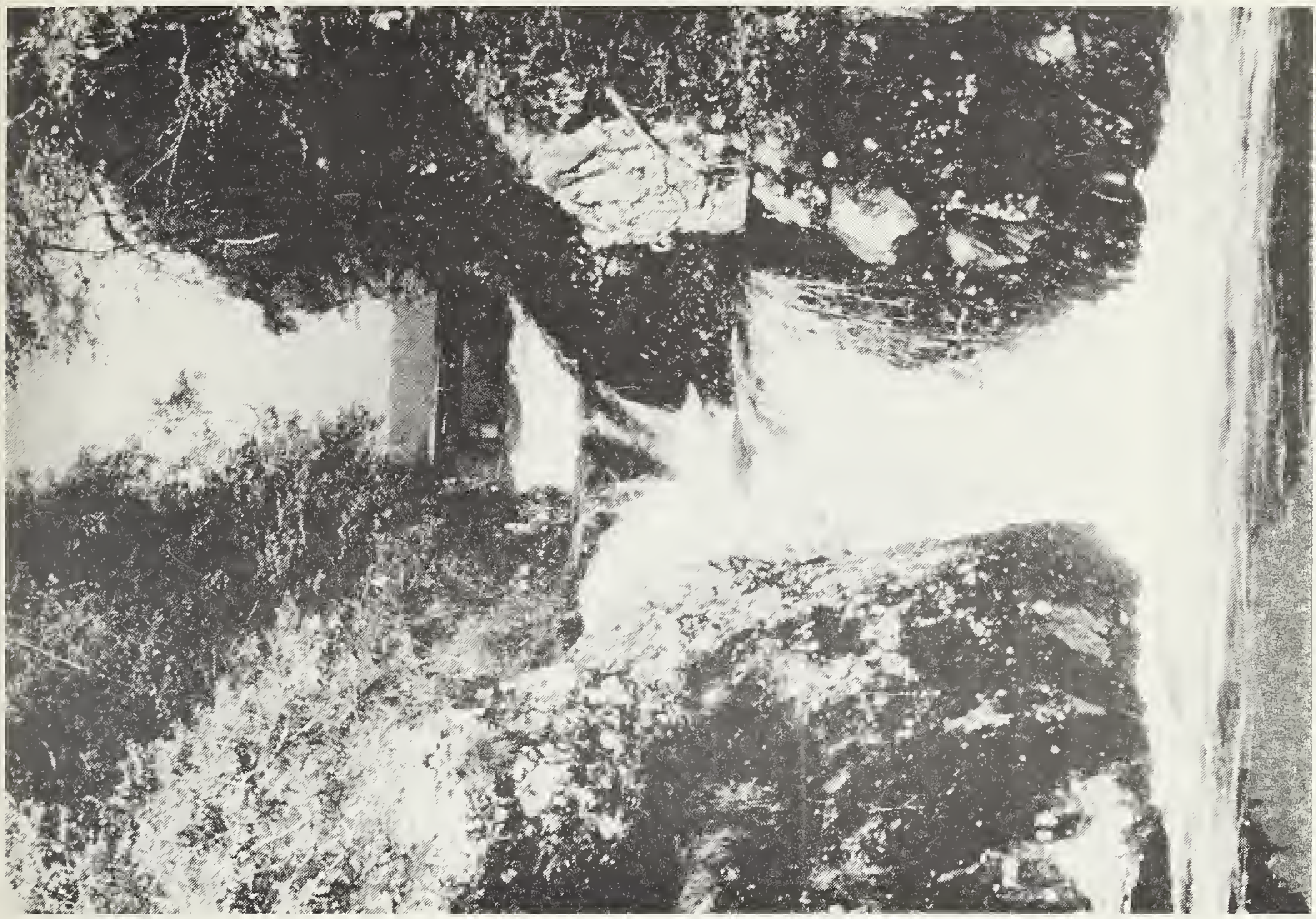
In this seventh year of the competition the format remained as in the previous year with separate sections for flora, fauna, landscape and humour. The number of entries received was twenty-nine. The judge for a second year was Mr. Sidney Clarke.

Winning entries were:

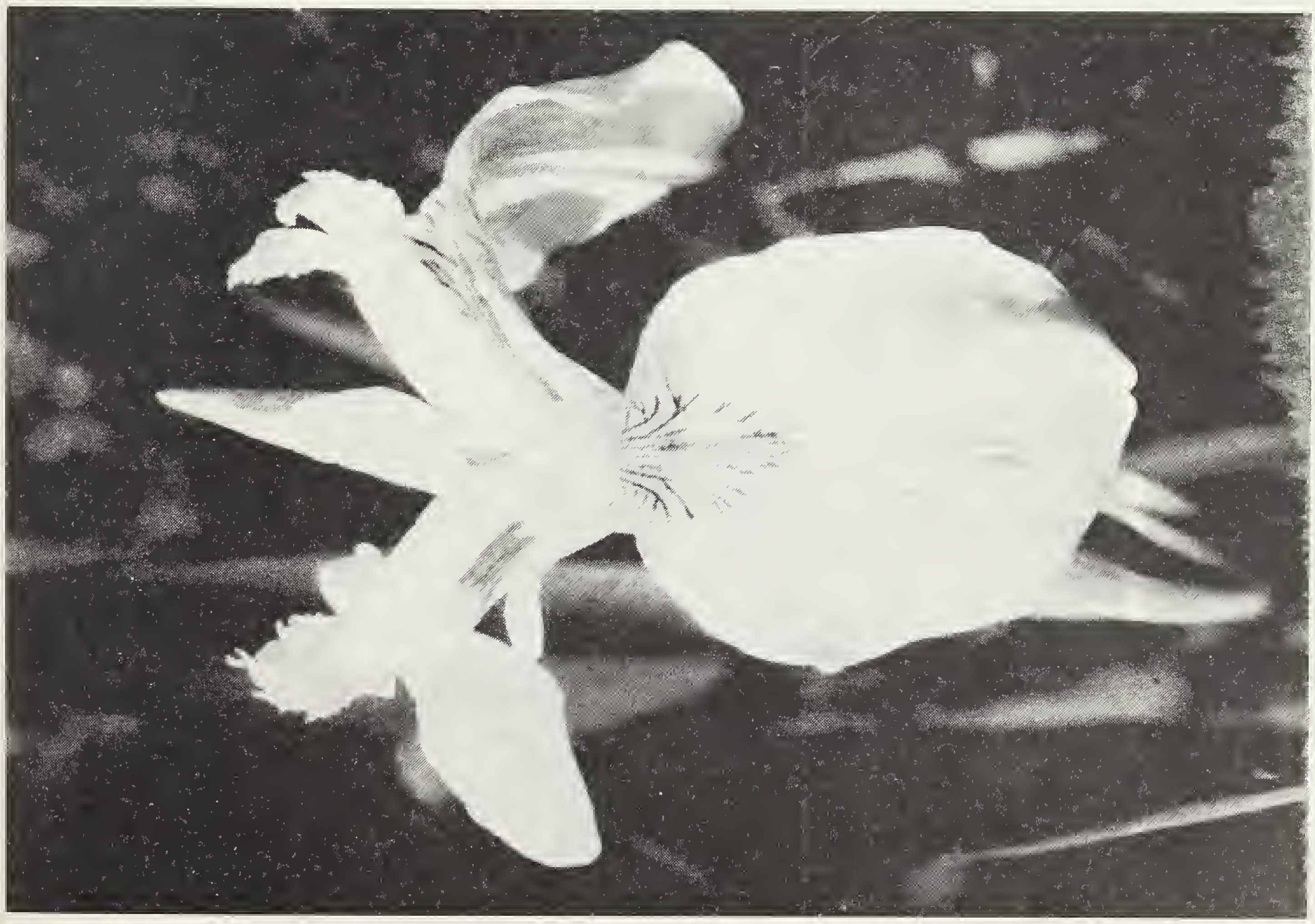
Flora	John Campbell	'Yellow iris'
Fauna	John Campbell	'Fox cub'
Landscape	John Campbell	'After the storm'
Humour	Bob Smith	'It's enough to make your hair stand on end'

These photographs are reproduced on pages 9 and 11.

GUNN PHOTOGRAPHIC COMPETITION – 1989



LANDSCAPE : After the storm by J.Campbell



FLORA : Yellow Iris by J.Campbell

GUNN PHOTOGRAPHIC COMPETITION – 1989

FAUNA : Fox cub by J.Campbell

HUMOUR : Its enough to make your hair stand on end by R.Smith

If such a positive side can be built into commercial forestry, where in Lothian might maximum benefit be achieved? Well, the bleak moorlands of the Central Belt would certainly be enhanced by well considered schemes. The launch of the Central Scotland Woodlands Initiative early in 1989, by the Secretary of State, includes such objectives. The foundation of the Initiative lies in the work of the Central Scotland Countryside Trust which has been encouraging and implementing tree-planting in the area for many years. The launch of the Government's Initiative promises to build on the work achieved so far. It is hoped that the outcome will allow a creation of a new tree and forest landscape in one of the most despoiled areas in Scotland. In so doing, the contribution to Scotland's heritage may well be as important as that created by the land improvers of the eighteenth and nineteenth centuries.

Dr. J.C. Sheldon
Regional Ecologist
Lothian Region

INTRODUCTION TO THE WEST PENTLANDS

The Pentland Hills are familiar to most hill-walkers from Edinburgh and the Lothians. Indeed, they extend to the edge of the city so that many rambles begin from bus termini such as those at Hillend and Colinton. Further west, well-used tracks run from Balerno to Carlops, and the drove road from Kirknewton to West Linton crosses the ridge through the Cauldstane Slap. The broad expanse of hills to the west of this last route, however, is not favoured by the average hill-walker, largely owing to its comparative inaccessibility, and this is the area to which we refer as the West Pentlands. Its northern and western boundary is the Lang Whang, the long road, crossing the moors to Carnwath. To the south the hills give way to more intensive grazing between West Linton and Dunsyre.

Now left to the plover and the curlew, the West Pentlands were not always deserted. Young Weir of Hermiston, the two Kirsties and the Four Black Brothers of the Cauldstane Slap may have been fictitious characters but the men and animals crowding the pass in cattle droving days were not. Ground to the north of the gap was a favourite overnight stance on the journey south from the Falkirk Tryst. At any one time hundreds of animals and their drovers might be seen on the hillside. Covenanters sought refuge in the folded hills where they held secret meetings (Roger's Kirk, a cleugh by the Medwin Water, comes to mind). The Romans found the ridge a vantage point and had a signal station and fortlet near Crosswood (Castle Greg). Further west beyond the Crane Loch, a long cairn, a broken cist and piles of stone point to a settlement in prehistoric times.

Craigengar, a hill in the centre of the West Pentlands, rises to 1700 feet. From the northern slopes the Crosswood Burn flows towards the Forth while the eastern and southern sides are within the Tweed drainage system. The western flank of the hill is drained by the Medwin Water, a tributary of the Clyde. The Medwin rises in Garval Syke and in nearby Ravens Cleugh the old county boundaries of Midlothian, Peebles and Lanark met. Craigengar is also in the middle of a ridge broken only by the Medwin water. The ridge descends gradually from its highest point, West Cairn in the north-east towards the Crane Loch in the west. This ridge affords views of much of Central Scotland and the Southern Uplands, as well as the more distant peaks of Goat Fell on Arran, Ben Lawers and Ben-y-Ghlo, all visible on a clear day. The Covenanter's Grave on Black Law looks away to the Ayrshire Hills and the home of the unfortunate covenanter who died of wounds received at the Battle of Rullion Green in November 1666. Finally the area has four reservoirs and the only natural loch in the Pentland Hills, the tiny Crane Loch, little more than a badly drained peat bog.

Nowadays the land is extensively managed for the grazing of sheep and cattle and for grouse. The acidity of the soil is increased by periodic muirburn and this has resulted in a uniform vegetation cover of acid-tolerant species over much of the area. Occasional outcrops of rock have little influence on the general character of the vegetation. Dominant plants are Heather (*Calluna vulgaris*), Cross-leaved Heath (*Erica tetralix*), Heath Rush (*Juncus squarrosus*), Wavy Hair-grass (*Deschampsia flexuosa*) and Cotton-grass (*Eriophorum vaginatum*), with Soft Rush (*Juncus effusus*), Blaeberry (*Vaccinium myrtillus*), Crowberry (*Empetrum nigrum*), Cloudberry (*Rubus chamaemorus*) and Mat-grass (*Nardus stricta*) also very common. The mosses are predominantly species of Sphagnum and Polytrichum as well as *Plagiothecium undulatum, Pseudoscleropodium purum* and *Aulacomnium palustre*, distinctive mosses which the beginner will find easy to recognise. Other plants favouring the nutrient-poor conditions are Cranberry (*Vaccinium oxycoccus*), Cowberry (*Vaccinium vitis-idaea*), Common Sundew (*Drosera rotundifolia*), Bog Asphodel (*Narchecium ossifragum*), Deer Grass (*Scirpus cespitosus*), White Sedge (*Carex curta*) and Star Sedge (*Carex echinata*).

Where drainage improves, ferns tend to clothe the valley sides. Unfortunately the commonest is Bracken (*Pteridium aquilinum*), but Golden-scaled Male-fern (*Dryopteris affinis*), Lemon-scented Fern (*Oreopteris limbosperma*) and Hard-fern (*Blechnum spicant*) are also plentiful. Stream sides such as those of the Medwin and Crosswood Burns are the richest botanically and typical plants are Primrose (*Primula vulgaris*), Dog Violet (*Viola riviniana*), Marsh Violet (*Viola palustris*), Heath Milkwort (*Polygala serpyllifolia*), Butterwort (*Pinguicula vulgaris*), Carnation Sedge (*Carex panicea*), Common Sedge (*Carex nigra*), Glaucous Sedge (*Carex flacca*) and Marsh Arrowgrass (*Triglochin palustris*). Hairy Stonecrop (*Sedum villosum*), Green Spleenwort (*Asplenium viride*) and Bladder Fern (*Cystopteris fragilis*) are worth searching for. The only naturally-sown trees grow beside streams; these are mainly Rowan and Birch, and are scarce. Other trees in the West Pentlands are found as plantations of conifers near Baddinsgill, Colzium, Medwinhead and Mendick Hill. Old exposed roots on the banks of the Baddinsgill Burn testify to former forest cover.

Roe deer sometimes visit the hills but the most conspicuous mammals, apart from sheep, are the mountain hares, particularly in spring when the snow has disappeared before their coats have turned to summer brown. The hills of early summer are home to the Curlew, Golden Plover, Meadow Pipit and Skylark. Ring Ousel, Teal, Mallard, Heron, Common Sandpiper, Dipper, Wagtails and Wheatear favour the valleys, while the Cuckoo prefers old plantations such as those near Baddinsgill. Kestrels and occasionally Short-eared Owls hunt over the area but Buzzards and Hen Harriers are rarities. A pair of Merlin nested successfully in 1987 while Black-headed Gulls have taken over an island in Westwater Reservoir. Lizards are best viewed on sunny days in spring before their winter torpor has gone. Brown trout are common enough in the burns.

The West Pentlands have much to offer but weather in these lonely moors can be severe and the usual hill-walking precautions should be taken before setting out. West Linton is a good starting-point and Bartholomew's *Map of the Pentland Hills* an ideal guide.

D. Adamson

'MOUNTAIN FLOWERS' COURSE HELD AT KINDROGAN FIELD CENTRE, PERTHSHIRE, JULY 1989

There are 118 species of mountain plants in Britain and a further 43 submontane species. Generally speaking mountain plants do not grow below 650 metres. During the six days of the course under the excellent tuition of Mr. Grant Roger and Mr. Michael Scott we saw many of the plants of the mica-schist mountains, an area which stretches from Ben Lui through to the Ben Lawers Range and on to Ben Vrackie, Glen Loch and Glas Maol. Mica-schist weathers to a fertile soil. We visited four sites in this area: Ben Vrackie, Glen Loch, Cairnwell and Glas Maol. We also visited Morrone near Braemar and the local Kindrogan Hill.

The first day of the course was spent looking at the flora on the nearby Kindrogan Hill, 495 metres at the highest point. Most of the plants were familiar, but many of the course members from southern England were excited to see such plants as Chickweed Wintergreen (*Trientalis europaea*), Melancholy Thistle (*Circium helenioides*) and Crowberry (*Empetrum nigrum*). The Lesser Twayblade (*Listera cordata*), a tiny orchid hidden in the heather, and Hairy Stonecrop (*Sedum villosum*) growing on the path were of special interest to all.

We ascended Ben Vrackie on the second day and as we passed wet flushes we found the little white spikes of Scottish Asphodel (*Tofieldia pusilla*), Starry Saxifrage (*Saxifraga stellaris*) with its delicate white flowers which have a yellow spot on each petal, and Yellow Saxifrage (*Saxifraga aizoides*). Also in the wetter areas was Broad-leaved Bog Cotton (*Eriophorum latifolium*) identified by its flat leaf with a short keeled point, differing from the Common Bog Cotton (*E. angustifolium*) which has a keeled leaf. Alpine Bistort (*Polygonum viviparum*) was plentiful. At the bottom of the spike little bulbils are formed and it is mainly by these that the plant spreads. Grubbing around at ground level revealed the tiny club-moss, *Selaginella selaginoides.* A surprise find amongst the heather was the beautiful Fragrant Orchid (*Gymnadenia conopsea*) - worth while getting down on hands and knees to sample the fragrance.

Near the top of the hill at a stony outcrop at about 700 metres grow the two specialities of the area - Purple Oxytropis (*Oxtropis halleri*) growing high on the crags, and Alpine Milk-vetch (*Astragalus alpinus*) which is much like Purple Milk-vetch (*A. danicus*) which is found down the east coast but the flowers are horizontal rather than erect as in *danicus*. Also at this site were the very hairy Alpine Mouse-ear Chickweed (*Cerastium alpinum*), the beautiful orange-flowered Alpine Cinquefoil (*Potentilla crantzii*), Northern Bedstraw (*Galium boreale*), Alpine Willowherb (*Epilobium anagallidifolium*) with its tiny drooping flower and small oval opposite leaves, and Hairy Rock Cress (*Arabis hirsuta*) with its long single stem with clasping leaves. The Rock Sedge (*Carex rupestris*) was pointed out to us by Grant Roger who fondly named it 'the pig'. The reason for this was easy to understand as most of the leaves were curled. Two of the fern allies were seen - Moonwort (*Botrychium lunaria*) and Stag's Horn Club-moss (*Lycopodium clavatum*). We came across leaves of Stone Bramble (*Rubus saxatilis*) which earlier would have had small white flowers. On the way to Cairnwell we stopped three miles south of Spittal of Glenshee to view a fine specimen of Spignel (*Meum athamanticum*) growing by the roadside, an uncommon whitish umbellifer with finely divided leaves which are strongly aromatic.

We continued to the ski-centre where we parked the vehicle and walked up the slope of Cairnwell Hill alongside the ski-tow. Cloudberry (*Rubus chamaemorus*) was plentiful, though some flowers had lost their white petals but retained their deep pink sepals. In wet areas there were Alpine Meadow Rue (*Thalictrum alpinum*) which differs from the other Meadow Rues in having unbranched spikes, Marsh Arrow-grass (*Triglochin palustris*), Mossy Saxifrage (*Saxifraga hypnoides*) and the Frog Orchid (*Coeloglossum viride*). As we climbed near the top of the hill we came across an attractive patch of Mountain Azalea (*Loiseleuria procumbens*). As the name implies it grows in low cushions and has small, deep pink flowers. Turning northwards we passed over Dwarf Willow (*Salix herbacea*) growing only a few inches high but producing the distinctive seed heads of Willow. Passing a wet flush we found a white flower which is more familiar by the seashore, a Scurvy-grass, but this one (*Cochlearia officinalis* ssp. *alpina*) was Alpine Scurvy-grass, a subspecies adapted to life on a mountain. As we walked along the path we found Dwarf Cudweed (*Gnaphalium supinum*) at our feet, a three-inch high hairy plant with flowers that have large dark brown bracts. At a rocky outcrop we were shown a very rare plant, Alpine Sandwort (*Minuartia rubella*). We were told there were only four plants in Britain. Also at this point there were some leaves of Alpine Saw-wort (*Saussurea alpina*). Above the outcrop there were several of the lovely white-flowered Mountain Avens (*Dryas octopetala*). We moved over to a bare sandy patch where we were shown another rare plant - Hoary Whitlow-grass (*Draba incana*), with its curiously twisted seed-pods.

On the descent to the roadway we spread out to look for Dwarf Cornel (*Chamaepericlymenum suecicum*). Just as we were giving up hope, two members called out simultaneously and there hiding in the heather and blaeberries *was* Dwarf Cornel, a beautiful plant with four large, white, petal-like bracts and in the centre several purple-black flowers. A splendid end to a splendid day!

The next day we had a long walk along Glen Loch to Loch Loch. Our main objective was to worship a very rare plant Yellow Oxytropis (*Oxytropis campestris*) which has only one other site in Britain. It has a yellow flower very similar in appearance to the Purple Oxytropis. Nearby on the rocks was Rock Speedwell (*Veronica fruticans*), in fruit only, unfortunately.

We returned to the ski-centre on the fifth day and then headed for Glas Maol. On the way we saw Bog Blaeberry (*Vaccinium uliginosum*) picked out from the common Blaeberry (*V. myrtillus*) by its blue-green leaves and white flowers. *Sibbaldia procumbens* intrigued us with its inconspicuous yellow flowers but very distinctive leaves of three leaflets each with three prominent teeth at the apex. At one point we set up and had a good view of a ptarmigan; this raised our eyes from the ground for a few moments.

In wet runnels we saw two of the alpine grasses, growing about ten inches high - Alpine Foxtail (*Alopecurus alpinus*) and Alpine Cat's-tail (*Phleum alpinum*). The brilliant blue flower of the Alpine Speedwell (*Veronica alpina*) was eye-catching. There was a loud crunching sound underfoot as we walked over the Rigid Sedge (*Carex bigelowii*) which in places nearer the top was the dominant plant.

Half of the party went to investigate the botanically interesting cliffs at Caenlochan Glen, but those remaining on the top of the cliffs with Grant Roger were rewarded by the sight of two rare plants, the Few-flowered Alpine Sedge (*Carex rariflora*) and the Chestnut Rush (*Juncus castaneus*), a handsome plant when viewed closely.

On the final day we journeyed to Braemar to visit Morrone Birkwood, a N.C.C. Reserve which is famous for its Twinflower (*Linnaea borealis*), many of which were found after a little searching. Having two little bell-shaped flowers hanging on either side of a single stem it is well named Twinflower. Also at Morrone is the Serrated Wintergreen (*Orthilia secunda*) but unfortunately only its leaves were found. However, we were invited to afternoon tea by the leaders' friend who lives in Braemar and in her garden was a beautiful clump of Serrated Wintergreen in flower.

On the way to Braemar we stopped at the foot of Glen Callatar and searched in the boggy area just beyond the road. There, as he had expected, Grant Roger found the tiny two-inch high Bog Orchid (*Hammarbya paludosa*).

On the way back to the car we watched a huge Adder for several minutes as it slithered through the heather.

This was a most enjoyable and informative week, largely due to our two leaders and perhaps the perfect weather.

E. Gillespie

SILAGE ON THE LIVESTOCK FARM

A pit or clamp of silage is a common sight on a stock farm, from the end of May until the following spring. The careful, thorough covering of this heap of fermented forage with black polythene sheeting, topped with countless car tyres, is a testimony to the importance farmers now attach to this valuable winter feed.

Silage is the material that results after fermentation of a crop of high water content, such as grass. The process of making silage is known as ensilage, and the container in which the crop is stored is the silo.

The storage of crops in silos is not new: it has been practised for centuries. In fact, the word 'silo' is derived from the Greek *siros* meaning a pit or hole sunk in the ground for storing corn. Many Greek writers refer to silos. Old paintings and ancient writings from around 1200 BC indicate that Egyptians were familiar with ensiling and the importance of air-tight sealing of the forage. The practice spread throughout Europe long before it became popular here.

A French farmer is credited with the practical modernising of ensiling after publishing a book on the subject in 1877. His technique of conserving green crops after rapid filling and sealing of the silo was rapidly adopted in France, and in the USA. Unfortunately these sound practices were neglected in the UK, partly due to the publication in 1885 of a book *Sweet Ensilage*. The method described in this book encouraged high temperatures in the ensiled mass by late cutting of the crop, wilting the grass in the field before filling the silo and then sealing after a temperature rise to 50°C. The result was well preserved silage but with a feeding quality no better than hay. Overheated silage smells and looks like tobacco! It was not until the 1950s that UK farmers realised that young leafy grass could be well preserved, encouraged by a wedge method of filling the silo developed by a Dorset farmer. This simple technique of filling in wedge-shaped layers, allowing greater consolidation and removal of air, provided the impetus needed for the swing to silage away from hay. By 1981 the acreage cut for silage had exceeded that cut for hay. Each year in Scotland over 5 million tonnes of silage are now made, the bulk from crops of perennial rye-grass.

Most of the silage is made in walled clamp silos housed indoors or in the familiar outdoor clamps. Some is still made in the tall towers that dot the landscape, but an increasing amount is being made in big bales. This method avoids the need for expensive machinery, allows small areas to be cut and with care produces a feed superior in quality to hay. This technique again was pioneered by a farmer, in this case from Northumberland. His method involves the enclosure of individual machine-rolled bales in black polythene bags, each of which is hand-tied! This labour-intensive process encouraged the development of a simpler system that involves machine-wrapping or 'cling wrap' with sheets of polythene.

Silage making is a busy time of organisation of men and machines for the majority of farmers who make large quantities in walled silos. Perhaps 1000 tonnes or more may be made at the first cut from 100 acres in late May or June. This is followed by a second, smaller cut in late July, and a third cut on dairy farms. The grass is cut with a disc- or a drum-mower ahead of a large precision-chop harvester. This collects, chops and delivers the mown swathes to a trailer running alongside. Trailers ferry the chopped, sweet smelling grass to the silo where a tractor-mounted buck-rake is used to fill the silo. A well-organised team of four men can clear 20 acres a day. It would take a week to make into hay! When the last load is buckraked onto the pit the whole clamp is covered and weighted down with tyres or straw bales. The result is a natural fermentation of sugars to acid preservatives which should produce a fruity-smelling, olive-green product capable of feeding dairy cows, fattening beef cattle or providing the main feed for wintering in-lamb ewes.

An article on silage would be incomplete without mention of a by-product of ensilage, the juice or effluent that escapes from the wet, consolidated mass. Underground tanks are required to collect the effluent. Should it escape into watercourses, it becomes a serious pollutant. The Biological Oxygen Demand - BOD - of silage effluent, which is used as a measure of the oxygen removed from the water, is higher than any other farm pollutant and 20 times higher than domestic sewage, itself 100 times higher than the BOD of clean river water. The more enterprising farmers feed it to their cattle.

G. Swift

MYRIAD AND ISOPOD SURVEY IN THE LOTHIANS

In the ENHS Journal 1986, having had the benefit of a grant from the Sime Bequest, I reported on this survey and foretold that I would be carrying on until 1988. A second report was published in the ENHS Journal 1988, p. 16, after I had made at least one collecting visit to every 10 km square. When it became apparent that three years was too short I decided to continue for a fourth year. This is a final report in relation to the grant.

Results can be summarised in Table 1:

	Vice-county 82 East Lothian	Vice-county 83 Midlothian	Vice-county 84 West Lothian
Chilopoda (Centipedes)	8 species	19 species	11 species
Diplopoda (Millipedes)	12 "	24 "	15 "
Isopoda (Woodlice)	6 "	9 "	8 "

Table 2 shows the species and the 10-km squares in which they have been found. There are 32 10-km squares in VCs 82-84 (the 'old' Lothians) and they lie within parts of two 100-km squares, NS(26) and NT(36).

Table 2:
Chilopoda (centipedes) in Vice-Counties 82, 83 and 84.

Species	10-km squares
1. *Brachygeophilus truncorum*	26/9-5, 9-7, 36/0-5, 1-6, 2-7, 3-4, 3-5, 3-6, 4-4, 5-6 6-6
2. *Clinopodes linearis*	36/2-7
3. *Cryptops parisi*	36/2-7
4. *Geophilus carpophagus*	26/9-7, 36/0-7, 2-4, 2-6, 6-8
5. *G. electricus*	36/0-7, 1-7, 3-6
6. *G. insculptus*	36/0-7, 0-8, 1-7, 2-6, 2-7, 3-6, 7-7
7. *Haplophilus subterraneus*	36/2-7
8. *Lamyctes africana*	36/2-7
9. *L. fulvicornis*	36/1-7, 2-7, 3-7, 5-6, 6-6
10. *Lithobius calcaratus*	36/1-5, 6-7
11. *L. crassipes*	26/8-6, 9-5, 9-7, 36/0-5, 0-7, 1-5, 1-6, 1-7, 2-4, 2-5, 2-6, 3-4, 3-5, 3-6, 4-4, 4-5, 4-6, 5-6, 5-7, 6-6, 6-7, 6-8, 7-6, 7-7
12. *L. forficatus*	26/8-6, 9-5, 9-6, 9-7, 36/0-5, 0-7, 0-8, 1-6, 1-7, 2-5, 2-6, 2-7, 3-4, 3-5, 3-7, 4-4, 4-5, 4-7, 5-6, 5-7, 5-8, 6-6, 6-7, 6-8, 7-6, 7-7
13. *L. lapidicola*	36/2-7
14. *L. macilentus*	36/3-4
15. *L. melanops*	36/0-7, 0-8, 1-7, 2-6, 2-7, 3-5, 3-7, 4-4, 4-5, 4-8, 6-7, 7-6
16. *L. microps*	36/0-7, 2-7
17. *L. micropodus*	36/2-7
18. *Necrophloeophagus flavus*	26/9-7, 36/0-7, 1-6, 2-6, 2-7, 3-4, 3-5, 3-7, 4-6, 4-8, 5-6, 6-7, 6-8, 7-6
19. *Strigamia crassipes*	36/7-7
20. *S. maritima*	36/0-7, 0-8, 3-7

Diplopoda (millipedes) in Vice-counties 82, 83 and 84.

	Species	10-km squares
1.	*Archiboreoiulus pallidus*	36/0-7, 1-6, 2-7
2.	*Blaniulus guttulatus*	36/0-7, 1-7, 2-7, 3-4, 3-6
3.	*Boreoiulus tenuis*	36/0-8, 1-7, 2-7
4.	*Brachydesmus superus*	36/0-5, 1-6, 2-6, 3-4, 4-5, 4-7, 5-8
5.	*Brachyiulus pusillus*	36/2-6, 3-7
6.	*Choneiulus palmatus*	36/2-7
7.	*Cylindroiulus britannicus*	26/9-5, 36/0-6, 0-7, 1-6, 1-7, 2-6, 2-7, 3-5, 3-6, 3-7, 4-6, 4-7, 5-7, 5-8, 7-7
8.	*C. caeruleocinctus*	36/3-7
9.	*C. latestriatus*	36/0-7, 1-7, 2-6, 2-7, 3-6, 4-4, 4-8, 5-8, 6-7, 6-8, 7-7
10.	*C. nitidus*	36/2-7
11.	*C. punctatus*	26/8-6, 9-6, 9-7, 36/0-5, 0-6, 0-7, 0-8, 1-6, 1-7, 2-4, 2-5, 2-6, 2-7, 3-5, 3-6, 3-7, 4-4, 4-5, 4-6, 4-7, 5-6, 5-7, 5-8, 6-6, 6-7, 6-8, 7-6, 7-7
12.	*C. salicivorus*	36/2-7
13.	*Glomeris marginata*	36/4-4, 4-6
14.	*Julus scandinavius*	26/9-6, 9-7, 36/0-5, 0-7, 0-8, 1-6, 1-7, 2-5, 2-6, 2-7, 4-4, 4-6, 4-7, 5-7, 6-7, 7-6, 7-7
15.	*Melogona gallica*	36/2-7
16.	*M. scutellare*	36/2-7
17.	*Nanogona polydesmoides*	36/0-6, 0-7, 1-7, 2-6, 2-7, 3-7, 4-4, 4-7
18.	*Nemasoma varicorne*	36/1-7, 4-4
19.	*Ommatoiulus sabulosus*	26/9-6, 36/0-6, 0-7, 0-8, 1-6, 1-7, 2-5, 2-6, 3-5, 3-6, 3-7, 4-5, 4-6, 4-7, 5-8, 6-7, 6-8, 7-7
20.	*Ophyiulus pilosus*	36/0-5, 0-6, 0-7, 0-8, 2-6, 2-7, 3-5, 3-7, 4-4, 4-6, 4-7, 4-8, 5-6, 6-8
21.	*Oxidus gracilis*	36/2-7
22.	*Polydesmus angustus*	26/9-7, 36/0-5, 0-6, 0-7, 1-6, 1-7, 2-5, 2-6, 2-7, 3-4, 3-5, 3-6, 3-7, 4-4, 4-5, 4-7, 5-6, 5-8, 7-6, 7-7
23.	*P. gallicus*	36/0-7
24.	*P. inconstans*	36/1-7, 3-5, 4-5
25.	*Proteroiulus fuscus*	26/8-6, 9-6, 9-7, 36/0-5, 0-6, 0-7, 0-8, 1-5, 1-6, 1-7, 2-5, 2-6, 2-7, 3-5, 3-6, 4-4, 4-5, 5-6, 5-8, 6-6, 6-7, 6-8, 7-6
26.	*Tachypodoiulus niger*	26/9-6, 9-7, 36/0-6, 0-7, 0-8, 1-6, 1-7, 2-4, 2-5, 2-6, 2-7, 3-5, 3-6, 3-7, 4-4, 4-5, 4-6, 4-7, 4-8, 5-6, 5-7, 5-8, 6-6, 6-7, 7-6, 7-7

Isopoda (woodlice) in VCs 82, 83-7, 84

	Species	10-km squares
1.	*Androniscus dentiger*	36/2-7, 3-7
2.	*Armadillidium vulgare*	36/0-7, 2-7, 3-7, 4-7, 5-7, 5-8, 7-7
3.	*Asellus aquaticus*	26/9-7, 36/0-6, 0-7, 1-7, 2-7
4.	*Cylisticus convexus*	36/2-7, 3-7
5.	*Ligia oceanica*	36/0-7, 1-7, 4-7, 4-8, 7-7

Isopoda (woodlice) in VCs 82, 83-7, 84 (continued)

6. *Oniscus asellus*	26/8-6, 9-6, 9-7, 36/0-5, 0-6, 0-7, 0-8, 1-5, 1-6, 1-7, 2-4, 2-5, 2-6, 2-7, 3-5, 3-6, 3-7, 4-4, 4-5, 4-6, 4-7, 4-8, 5-6, 5-7, 5-8, 6-6, 6-7, 6-8, 7-6, 7-7
7. *Philoscia muscorum*	26/9-7, 36/0-7, 1-7, 2-6, 2-7, 3-5, 3-6, 3-7, 4-4, 4-6, 4-7, 4-8, 5-6, 5-7, 5-8, 6-7, 6-8, 7-7
8. *Porcellio scaber*	26/8-6, 9-6, 9-7, 36/0-6, 0-7, 0-8, 1-5, 1-6, 1-7, 2-4, 2-6, 2-7, 3-4, 3-5, 3-6, 3-7, 4-4, 4-5, 4-6, 4-7, 4-8, 5-6, 5-7, 5-8, 6-6, 6-7, 6-8, 7-6, 7-7
9. *P. spinicornis*	26/8-6, 36/0-6, 2-7, 3-5
10. *Trichoniscus pusillus*	26/9-5, 9-6, 9-7, 36/0-5, 0-6, 0-7, 1-6, 1-7, 2-6, 2-7, 3-4, 3-5, 3-6, 3-7, 4-4, 4-6, 4-7, 4-8, 5-6, 5-7, 5-8, 6-7, 6-8, 7-6, 7-7
11. *Styloniscus mauritiensis*	36/2-7

The preponderance of species within VC83 (Midlothian) is not difficult to explain.

(a) The collector's base is within this county.
(b) It has 16 squares or part squares, to 8 in West Lothian and 14 in East Lothian.
(c) The Royal Botanic Garden is in the Vice-county (36/2-7) and searches there have produced *Lamyctes africana, Lithobius lapidicola, Lithobius micropodus, Choneiulus palmatus, Cylindroiulus salicivorus, Oxidus gracilis* and *Styloniscus mauritiensis*.
(d) Certain species are synanthropic, that is they survive only, or perhaps better, in relationship with man. These include *Cryptops parisi* (first for Scotland found in Edinburgh), *Lithobius microps* and *Haplophilus subterraneus*. These are examples given by A.D. Barber in his paper, "Distribution Patterns in British Chilopoda, 1985". There may even be other reasons.

The most widespread species, found in 75 per cent of the squares, are *Lithobius crassipes, L. forficatus, Cylindroiulus punctatus, Tachypodoiulus niger, Oniscus asellus, Porcellio scaber* and *Trichoniscus pusillus*, and in 50 per cent of the squares, *Julus scandinavius, Ommatoiulus sabulosus, Polydesmus angustus, Proteroiulus fuscus* and *Philoscia muscorum*.

C.P. Rawcliffe

Corrections to ENHS Journal 1988, p. 17:
Cylindroiulus salicivorus, though it was a first for Britain, cannot be claimed as such by the author.
For *Lamyctes africanus* read *Lamyctes africana*.

PLANTS FROM THE BIRD-TABLE

It seems that every year brings queries from amateur botanists or interested gardeners about plants which they have failed to recognise or to identify from their British Flora, and a large number of these can be traced to one source - seeds imported for the purpose of feeding poultry, pigeons, caged and wild birds. Distributors buy large quantities of seeds from all parts of the world. The current list from a well-known seed-merchant shows that, amongst many other items, canary-seed from Morocco, Canada and Australia; millet from Dakota and Japan; hemp from Manchuria; sunflower from China, Kenya and Hungary; Russian pinenuts, German rape, Australian oats and linseed, French maize, New Zealand and Canadian peas, paddy-rice and buckwheat, are all on offer. In general, they will arrive in sacks, many of which will contain a certain amount of 'impurities' harvested with the crop, such as soil, straw and local weeds. The produce is sifted, cleaned, polished and repacked, so any accidental 'weeds' which survive these processes are likely to be those whose seeds most closely resemble those of the main food-plant. The commercial wild-bird food which goes on our bird-tables is made up to individual manufacturers' recipes, which may not always be consistent, from basic grains and seeds, with the addition of some of the siftings from earlier cleaning processes.

A good proportion of the contents of a typical bird-seed mix is likely to be made up from quite ordinary seeds, including varieties of cabbage, lettuce, mustard, wheat, oats, maize, clover, goosefoot, etc, and I am sure many members of the ENHS often have to weed young brassica and cereal seedlings from cracks in their crazy-paving if it is anywhere near the bird-table! Seeds rich in oil are nutritionally valuable for birds as well as man, so linseed, rape, sunflower, mustard and hemp will be included, and plants used by man for centuries as culinary flavourings, such as dill, fennel and cumin, are favoured in 'tonic' mixtures for cage birds.

Some of these introductions would be an asset to any flower-garden, like the beautiful blue flax, tall sunflowers, striking opium-poppies, decorative heads of canary-grass or Indian millet, long-lasting teasels. (In my own garden I notice that the teasels, though I assume they have originated from bird seed, are the native *Dipsacus sylvestris* and not the French or Fuller's teasel, *D. sativus*). But after all, it is only seeds which our birds fail to find and eat which have a chance to germinate; I see that bank voles too are keen to clear up any leavings under the bird-table! A few botanists have made more serious studies of the subject by sowing and cultivating bird-seed mixtures, but without detailed keys and illustrations it does not seem appropriate to include here lists of plants which readers are unlikely ever to come across. Here in east Scotland there must be fewer of the foreign seeds capable of survival than in the south or west of England.

Research for this article has at least cleared up one mystery for me. Two years ago a showy but very late-flowering (October-November) yellow Compositae appeared in my rose-bed which I rather dubiously identified as *Bidens cernua* var. *radiata*, though it did not wholly accord with the Keble Martin illustration. Now, comparison between my sketch made at the time and an illustration in one of J.L. Mason's articles convinces me that the 'Bur-marigold' was in fact Niger-seed (*Guizotia abyssinica*), an oil-seed grown in Ethiopia and India, and undoubtedly a bird-seed alien.

M. Watson

References

Mason, J.L. *Bird-seed Aliens.*
McClintock, D. *All from Bird Seed.*
Haith, J.E., Seed Merchant.

NOTES ON NATURAL HISTORY - 1989

Observations

23.12.88 Duddingston Loch, Edinburgh: 1 Goosander. *(C.P.R.)*

1. 1.89 Silverknowes, Edinburgh: on our New Year's Day walk along Silverknowes foreshore there were large flocks of Knot and Dunlin and other waders in good numbers. We noted a flock of 35 Golden Plover. The morning sunshine showed up the plumage of the birds beautifully. *(E.S.R., M.R.)*

1. 1.89 Edinburgh: At 0200 hrs a Robin was singing in a tree at the corner of Ann Street and Dean Park Crescent. *(C.P.R.)*

8. 1.89 Manor Valley, Peebles (NT 202 340): Male Sika Deer grazing with cattle in a field. Apparently tame. *(D.A., G.M.)*
(A herd of Sika Deer have lived for many years in the Dawyk area. Ed.)

17.1.89 Peebles: At least 6 pairs of Goosander on the River Tweed. Also many Dippers. *(M.R.)*

26.1.89 Dalkeith, Midlothian: Greenfinch 'courting' note heard for first time this year, a nasal 'dzhwee' or 'tswee', a note only heard during breeding season. *(E.H.)*

28.1.89 Gullane Bay, East Lothian: Hundreds of Fieldfare on the Sea Buckthorn. *(M.M.C.W.)*

30.1.89 Blackhall, Edinburgh: Birds paid unusually little attention to the bird table in this mild winter, so I was particularly pleased to see my first Siskin, a female, feeding on the nuts. *(M.R.)*

1.89 The mild winter produced many flowers earlier than usual: 8.1.89 Crocus, 15.1.89 Lesser Celandine, 16.1.89 Daffodil, 28.1.89 Flowering Currant, 29.1.89 Barren Strawberry, 6.2.89 Wych Elm, 19.2.89 Shepherd's Cress (*Teesdalia nudicaulis*). *(D.A., G.M.)*

1.2.89 Gladhouse, Temple, Midlothian: Barn Owl flew across road to within 6 yards. The patterned wing and mantle were very beautiful. *(E.L.)*

10.2.89 Holyrood Park, Edinburgh: 1 dead Brown Hare on the slope above St. Margaret's Loch. *(C.P.R.)*

13.2.89 Seafield, Edinburgh: Adult Glaucous Gull. *(B.C.)*

13.2.89 Musselburgh Lagoons: Snow Buntings. *(B.C.)*

13.2.89 Aberlady, East Lothian: Brent Geese. *(B.C.)*

13.2.89 Hopetoun, South Queensferry: Stormforce winds caused a lot of damage during the night. Several large trees came down at Hopetoun, notably 'The Lovers'. These were two Cedar of Lebanon planted in 1874 by Princess Alexandra and her father, the King of Denmark. One tree leaned into the arms of the other, hence the name. I understand that garden furniture is to be made from the best of the wood for the comfort of visitors. *(M.R.)*

21.2.89 Strathearn Road, Edinburgh: A young Sparrowhawk (ringed) was noticed on the ground in the garden. When it was still there a few hours later the SSPCA was called and the bird was taken away for observation. The following day it was released in Queen Street Gardens where it had been reared and ringed the previous year. *(J.L.)*

3.3.89 Coldstream, Berwickshire: Black Swan (probably an escape). *(M.M.)*

5.3.89 Aberlady, East Lothian: Lapland Bunting were seen behind the Marl Loch feeding with a mixed flock of Linnet and Chaffinch. *(M.R.)*

10.3.89 Linlithgow Loch: Male Ring-necked Duck - very fast asleep. *(M.M.)*

10.3.89 Carron Reservoir, Kilsyth, Stirlingshire: A Ringed Plover seemed unusually early inland. *(M.M.)*

11.3.89 Midlothian: A Water Rail in a roadside ditch. *(M.M.C.W.)*

12.3.89 Heriot village, Midlothian (NT 393 529): Rusty-black Fern (*Ceterach officinarum*) on north-facing walls near the church. *(D.A., G.M.)*

18.3.89 Islay: 2 Wheatear. *(M.M.)*

23.3.89 Inverleith Park Pond, Edinburgh: Black-headed Gulls flying low over the pond, say 2½ feet above the surface, and diving to take Sticklebacks. *(C.P.R.)*

24.3.89 Bawsinch SWT Reserve, Edinburgh: A Fox, a sickly-looking animal, rested in the sun unperturbed by two humans only 10 paces from it. *(C.P.R.)*

25.3.89 Clubbiedean, Torphin, Edinburgh: Buzzard and Short-eared Owl. *(B.C.)*

28.3.89 East Linton, East Lothian: Chiffchaff. *(M.M.)*

29.3.89 Bavelaw Marsh, Balerno, Midlothian: Male Ruddy Duck. *(B.C.)*

31.3.89	Dye Water, Longformacus, Berwickshire: Male Ring Ouzel.	*(E.L.)*
2.4.89	Linlithgow Loch: 6 Sand Martins.	*(M.M.)*
7.4.89	Inverleith Park Pond, Edinburgh: 1 male Red-breasted Merganser.	*(C.P.R.)*
8.4.89	Lammermuir Hills, East Lothian: A female Hen Harrier, a Merlin and a pair of Golden Plover. Also several White Hares.	*(M.R.)*
9.4.89	Glack Mill Dam, Dunkeld (NO 030 470): Osprey carrying a fish and disturbing Black-headed Gull colony.	*(D.A., G.M.)*
13.4.89	Gosford, Aberlady, East Lothian: 10 Surf Scoters.	*(M.M.)*
15.4.89	Glencorse and Loganlea Reservoirs, Penicuik, Midlothian: Common Sandpipers and Ring Ouzels arriving.	*(M.M.)*
15.4.89	Comely Bank, Edinburgh: 0300 hrs, Mistle Thrush singing.	*(C.P.R.)*
24.4.89	Fala Moor, Tynehead, Midlothian: 14 Golden Plover in summer plumage calling mournfully while thousands of Pink-footed Geese were disturbed by low-flying aircraft.	*(M.M.C.W.)*
28.4.89	Insh Marshes, Kingussie: Marsh Harrier. 7 or 8 Slavonian Grebes (some displaying) at another Inverness-shire loch.	*(M.M.)*
29.4.89	Pitlochry: Wood Warbler singing.	*(M.M.)*
29.4.89	Bawsinch, Edinburgh: First Swallow of 1989.	*(C.P.R.)*
30.4.89	Bawsinch, Edinburgh: Common Sandpiper.	*(C.P.R.)*
1.5.89	Longformacus, Berwickshire: Motoring along the road by the Dye Water we had the company of a Cuckoo who, as we moved, also flew from pole to pole, then he flew off. When returning he joined us once more and repeated the performance. On that same stretch we had Swallows, Common Sandpipers, Curlews, Redshanks and Dippers and heard Ring Ouzels.	*(N.F.)*
3.5.89	Prestonfield, Edinburgh: A Heron being 'buzzed' by a Crow.	*(B.G.)*
5.5.89	The Hirsel, Coldstream: Many Orange Tip butterflies, males, by the River Leit. Much Ground-ivy, Leopard's-bane and Primrose in flower.	*(E.H.)*
6.5.89	Aberlady Bay, East Lothian: Male Garganey.	*(B.C.)*
6.5.89	Hopes Reservoir, Gifford, East Lothian: 3 Ring Ouzels on Juniper bushes.	*(M.M.C.W.)*
7.5.89	Loch Benachally - Loch Oiseneach area, Dunkeld (NO 040 500): 6 Ospreys, 2 Hen Harriers; also Peregrine, Buzzards and Kestrels.	*(D.A., E.M.)*
7.5.89	Hart Fell, Moffat, Dumfriesshire: A few Dotterel.	*(J.L.)*
8.5.89	St. Abbs, Coldingham, Berwickshire: 3 Yellow Wagtails.	*(B.C.)*
9.5.89	Edinburgh: First Swift seen.	*(E.L.)*
10.5.89	Threipmuir, Balerno, Midlothian: Woodcock roding.	*(E.L.)*
13.5.89	Neidpath, Peebles: Male Pied Flycatcher.	*(B.C.)*
14.5.89	Lower Largo, Fife (NO 430 025): Corn Bunting on telegraph wire.	*(D.A., G.M.)*
16.5.89	Prestonfield, Edinburgh: Awakened at 4.30 am by a Cuckoo calling in the trees at the bottom of the garden. He stayed about 10 minutes before flying away, and returned very briefly an hour later.	*(B.G.)*
21.5.89	Callander, Perthshire, road to Keltie Water near golf course: Large stand of Ostrich Fern (*Matteucia struthiopteris*).	*(D.A., G.M.)*
21.5.89	Emly Bank, Gladhouse Reservoir, Temple, Midlothian: Emperor Moth resting in the heather.	*(J.L.)*

24.5.89	Habbies Howe, Penicuik, Midlothian: An extensive area covered in Oak Fern. Also a stand of Melancholy Thistle.	*(M.R.)*
25.5.89	Eyemouth, Berwickshire: Large patches of Spring Squill (*Scilla verna*) in flower on golf course.	*(E.H.)*
25.5.89	Raeburn Place Sports Ground, Edinburgh: 0350 hrs, woke to noise of Gulls and found Lesser Black-backed Gulls and Black-headed Gulls searching for food, possibly Earthworms.	*(C.P.R.)*
27.5.89	Newcraighall, Edinburgh: Blackcap singing.	*(E.L.)*
30.5.89	Coldingham Bay, Berwickshire: 3 small Blue butterflies in chasing flight. Kidney Vetch, their food plant, grows plentifully here.	*(E.H.)*
7.6.89	Cramond Bridge, Edinburgh: Soft Shield Fern (a first record for this area); and a prolific spread of Saracen's Woundwort (*Senecio fluviatilis*) which is uncommon in the Lothians.	*(M.R.)*
9.6.89	Inverleith Park Pond, Edinburgh: 1 Little Grebe.	*(C.P.R.)*
14.6.89	Duns, Berwickshire: At Duns Castle Reserve a Mute Swan walked with her four one-week-old cygnets all the way from the Mill pond to the 'Hen Poo' - distance of over half a mile!	*(M.M.)*
19.6.89	Braid Burn, Edinburgh: A Water Vole feeding on a stem of Water Crowfoot.	*(J.L., M.R.)*
19.6.89	River Tay, Ballinluig and Pitlochry: Osprey seen fishing on two occasions.	*(M.M.)*
20.6.89- 29.6.89	Balranald, Uist and Uig, Skye: Corncrakes calling.	*(M.M.)*
29.6.89	Hopetoun, South Queensferry: First Spotted Flycatcher seen, a very late migrant. A pair nested in an Oak and later in the season a family of 4 were seen feeding with the parents. Red Admiral butterfly on nettles, the first seen here for several years.	*(M.R.)*
2.7.89	North of Lake of Menteith, Stirlingshire (NN 570 010): Californian Brome (*Bromus carinatus*) an uncommon grass growing by roadside.	*(D.A., G.M.)*
9.7.89	Cloich Hills, Peeblesshire (NT 200 500): 3 foxes.	*(D.A.)*
9.7.89	Fala Moor, Tynehead, Midlothian: A Common Lizard.	*(M.M.C.W.)*
9.7.89	Sumburgh Head, Shetland: Brünnich's Guillemot - a rare visitor from Iceland or northern Norway.	*(M.M.)*
16.7.89	Newlands Old Church, Romanno Bridge, Peeblesshire: Redstart.	*(E.L.)*
19.7.89	Kirkliston, Midlothian: A flowering spike of Chicory (*Cichorium intybus*) in the grass verge.	*(M.R.)*
20.7.89	Holy Island, Northumberland: Common Blue butterfly, Six-spot Burnet-moth, Cinnabar moth and Garden Tiger moth.	*(M.M.C.W.)*
22.7.89	Solway coast, west of Sandhills Bay, Dalbeattie, Dumfriesshire: Very large number of large jelly-fish washed up on beach and caught in fishing nets.	*(E.McA.S.)*
22.7.89	Fountainhall Road, Edinburgh: A Gold Spot moth flew into my bedroom, attracted by the light.	*(J.L.)*
27.7.89	Earlston, Berwickshire: Whitethroat family.	*(E.L.)*
27.7.89	Barnton, Edinburgh: 0800 hrs, Sparrowhawk feeding on kill (a dove) in back garden. Able to approach to within 5 yards before hawk disturbed and flew off. The carcase was left undisturbed all day. The hawk did not return and the absence of small birds was obvious throughout the day. A Hedgehog was observed at the carcase after nightfall.	*(E.McA.S.)*

31.7.89 Lake of Menteith, Stirlingshire, by the A81 and at Milton, Aberfoyle by the B829: Red Bistort (*Polygonum amplexicaule*), uncommon garden escape established by these roads. *(D.A., G.M.)*

5.8.89 Lanrick Castle, Doune, Stirlingshire: A Barn Owl flew out of old buildings on group outing. *(D.G.)*

6.8.89 Barns Ness, Dunbar, East Lothian: 7 Whimbrel. *(M.M.)*

12.8.89 Hermand Birch Wood SWT Reserve: Found a resting *Cordulegaster boltanii*, a big black and gold dragonfly, on grass stalks. I took it on my finger to examine it. My finger warmth revived it and after a few minutes it flew away. *(C.P.R.)*

15.8.89 Carron Reservoir area, Kilsyth, Stirlingshire: 14 Kestrels in one day, 12 hunting in one small area and one sheltering from torrential rain under an overhanging rock. *(M.M.)*

20.8.89 Aberlady, East Lothian: Over 80 Sanderling. *(M.M.)*

22.8.89 Aikieside, Cockburnspath, Berwickshire: Common Lizard, about 4 in. long. *(E.H.)*

24.8.89 Duddingston Loch, Edinburgh: 4 Swifts plus many House and Sand Martins. *(C.P.R.)*

25.8.89 Barnton, Edinburgh: Painted Lady butterfly in garden. *(E.McA.S.)*
(NB Similar observation at Blackhall, Edinburgh, 7.9.88 (E.G.))

27.8.89 Tailend Moss, Bathgate, West Lothian: A young Cuckoo eating 'woolly-bear' caterpillars off the heather. The white spot on its nape was very clear. Most birds find this caterpillar too unpleasant to eat. *(M.M.C.W.)*

29.8.89 Forth Estuary: From the good ship *Gardyloo* over 500 Manx and 6 Sooty Shearwaters skimming low over the sea, 1 Black Tern and also Sandwich, Arctic and Common Terns, 8 Arctic and 5 Great Skuas, numerous Guillemots, Puffins, Razorbills and Gannets. A very memorable day. *(M.M.)*

2.9.89 Bawsinch, Edinburgh: 1 Spotted Flycatcher. 1 Chiffchaff seen and heard singing. *(C.P.R.)*

9.9.89 Bawsinch, Edinburgh: 1 Swallow and many House Martins. *(C.P.R.)*

10.9.89 Kinnaird Hills, near Loch Skiach, east of Aberfeldy (NN 950 500): 5 species of Clubmoss: Interrupted Clubmoss (*Lycopodium annotinum*), Stagshorn Clubmoss (*L. clavatum*), Alpine Clubmoss (*Diphasiastrum alpinum* or *L. alpinum*), Fir Clubmoss (*Huperzia selago*) and Lesser Clubmoss (*Selaginella selaginoides*). 12 Ravens flew overhead and 5 Buzzards wheeled in the sky. *(D.A.,G.M.)*

12.9.89 Dalkeith, Midlothian: Forest Bug (*Pentatoma rufipes*), beetle-shaped, about 1.4 cm long, reddish brown on top with bronze sheen; back of abdomen glossy black; antennae, legs and point of shield reddish. *(E.H.)*

15.9.89 Hopetoun, South Queensferry: Autumn crocus (*Crocus nudiflorus*) in flower. This is an addition to the Flora of West Lothian check list. *(M.R.)*

16.9.89 Traquair, Peeblesshire: 2 specimens of *Agaricus fuscofibrillosus* in a field among many other more common Agaricus mushrooms. *(E.McA.S.)*

16.9.89 Loch Ruthven, Inverness: 2 Slavonian Grebes and 3 Barnacle Geese. *(M.M.)*

17.9.89 Glen Garr, Obney Hill, south-west of Dunkeld (NO 010 380): Young Golden Eagle. This bird was on the southern margin of the Highlands. *(D.A.,G.M.)*

20.9.89 Slateford, Edinburgh: 2 uncommon fungi found beside the Water of Leith near the Slateford entrance. A single *Pluteus umbrosus* was growing on a rotten tree-trunk beside the path. This is rare in Scotland but may be seen more frequently further south. About 20 yards away on another fallen tree a small group of *Pluteus thomsonii* was growing. This, too, is uncommon but not as rare as *P. umbrosus*. Both identifications have been confirmed by Dr. Roy Watling. *(E.F.)*

24. 9.89	West Barns, Dunbar, East Lothian: Wryneck.	*(B.C.)*
26. 9.89	Burnmouth, Berwickshire: Numerous Red Admiral butterflies, many feeding on ivy flowers. Also Small Tortoiseshell and Small Copper butterflies.	*(E.L.)*
26. 9.89	Tyne Sands, Tyninghame, East Lothian: 19 light-bellied Brent Geese.	*(J.S.)*
26. 9.89	Broughton Heights, Peeblesshire: A buzzard.	*(M.M.C.W.)*
2.10.89	Gladhouse, Temple, Midlothian: 2 Whooper Swans.	*(M.M.)*
2.10.89	Musselburgh: Large number of Wigeon - over 200 counted - together with a flock of about 20 Scaup.	*(M.M.)*
3.10.89	Montrose, Angus: By Bridge of Dun, 22 Swallows; in the Montrose Basin, 200 Barnacle Geese.	*(M.M.C.W.)*
4.10.89	Tyninghame Bay, East Lothian: 3 Pintail and 27 Barnacle Geese.	*(B.C.)*
8.10.89	Carham, Coldstream: 2 juvenile Whooper Swans on River Tweed. Plumage greyish and beaks not yet clear yellow at base.	*(E.H.)*
17.10.89	Berwick-on-Tweed: Angle Shades moth discovered while observer was tidying up dead leaves in the garden.	*(J.L.)*
21.10.89	Yellowcraigs, North Berwick, East Lothian: Red Admiral butterfly.	*(B.C.)*
23.10.89	Tyninghame, East Lothian: 2 Red Admiral butterflies.	*(E.H.)*
29.10.89	Vogrie, Pathhead, Midlothian: 11 Whooper Swans overflying Vogrie County Park.	*(B.G.)*
5.11.89	Royal Botanic Garden, Edinburgh: 2 Redwings.	*(C.P.R.)*
18.11.89	Threipmuir, Balerno: 5 Roe deer feeding at western edge of reservoir.	*(D.M.,J.B.)*
12.12.89	An Edinburgh supermarket: A Small Tortoiseshell butterfly flying around.	*(B.G.)*

A mild winter

January 1989 will be remembered in Scotland for its exceptional warmth. Mean temperatures were almost 5°C above average. The south-westerly winds brought up to three times the average rainfall to the Western Highlands. In contrast, parts of Aberdeenshire had less than a tenth of the normal rainfall, making it the driest January since 1925. Near Coldstream in Berwickshire it was also the driest January in a record stretching back to 1904. Fifty-one hours of sunshine were recorded at the Royal Botanic Garden in Edinburgh, a minimum temperature of 7.5°C and 36 mm total of rain. Dunbar had 65 hours sunshine and only 12 mm rain. Kinlochewe however recorded 513 mm and Sloy 529 mm. December and January combined were also the mildest on record.

M. Robertson

Waxwings

The winter of 1988-89 was a waxwing year with an irruption of these rare visitors reported in mid November. No-one understands why these birds migrate in large numbers at irregular intervals: the last invasion was in 1974. The birds can be approached quite closely as they are unused to human beings, breeding in birch forests of the taiga of Scandinavia and eastwards into Russia.

A flock of about 30 waxwings, feeding on haws and elderberries, was observed along the old railway track at Dalmeny on 20th November 1988. Being very acrobatic birds, they spent a lot of time drinking melt-water from ice on the elder trees. There were many reports of sightings in Edinburgh at this time.

J. Carlyle and M. Robertson

Up to 100 waxwings were observed by the canal near Harrison Road, Edinburgh early in January 1989 (E.F.) and more than 50 were seen feeding on cotoneaster at ASDA, Newcraighall, Edinburgh at the beginning of February.

(M.M.C.W.)

Great Spotted Woodpecker

A male Great Spotted Woodpecker has been a regular visitor to our garden in Balerno since May 1988.

The bird-table is very basic - a larch fence post with a platform on top - and is situated about eight feet from the kitchen window amongst small shrubs and herbaceous plants. After the woodpecker's first appearance, in order to encourage him to return, we drilled one-inch holes in the post and filled them with kitchen scraps. As the other garden birds soon learnt how to cling to the post and take this food, smaller and deeper holes were drilled so that the small birds could not empty the holes before the woodpecker appeared. Whilst the woodpecker is feeding, very few birds will come to the table, but occasionally he does chase starlings away with a quick jab from his beak.

At the end of June this year two young woodpeckers were brought to the garden. The adult fed them on the table as the young seemed to find it difficult to cling on to the post. Two days later, the young appeared back and were clinging to the post with the adult. That is the last time we saw the young woodpeckers. Fortunately the male still comes for his food.

C. and S. Campbell

More dunking corvids

During the year a friend living in Dunfermline had noticed the development of the dunking habit described by B. Gill in the 1988 Journal.

His assessment of the situation was that a Crow in his garden had discovered that toast and hard bread were made more easily edible when softened in water, and that the habit was then passed on by example. Apparently such behaviour has become quite common in his area.

This might be the answer to part of B. Gill's question.

J.A. Stewart

Nesting

During June in the Pitlochry area I saw

- a Coal Tit's nest in a dyke by the B8019
- Pied Flycatchers going in and out of a nesting box on the Killiecrankie RSPB reserve
- Great Spotted Woodpeckers feeding young in a hole excavated high up in a tree in the grounds of Bonskeid House
- near the Queen's View a Tawny Owl flying by day presumably with young to feed close by
- Tree Creepers with young out of the nest by the Soldier's Leap
- a Common Sandpiper some feet up a tree above the River Garry whose nest and eggs must have been destroyed by the suddenly swollen river.

M.M.C. Woolgar

Stoats

I refer to Miss Elizabeth Landells' article on seeing a stoat in a tree (ENHS Journal 1988, p. 23). There is no doubt stoats do climb trees. Whether they plunder eggs and nestlings in the same way as their relatives, the weasel and pine marten, I don't know, but a friend and I observed one stoat making use of trees while hunting rabbit.

The chase was a leisurely affair for the stoat which kept out of sight in the long grass, picking up the scent when the rabbit changed course as it nibbled along. When the prey became aware that it was being hunted, the pattern changed and it was then that I saw the stoat climb three or four feet up a convenient tree trunk to get a sighting of the rabbit. It then descended and made off in the right direction. This manoeuvre was repeated several times and after about fifteen minutes the rabbit was completely confused, so much so that it hopped, straight towards us and was killed by the keeper's dog. So this particular stoat climbed trees for an obvious purpose. It is also a very inquisitive animal, and Miss Landells' stoat may have been merely exploring or perhaps investigating something which had aroused its interest. It's fun to speculate!

M. Robertson

A classic encounter

On the 10th of May this year, near Spott in East Lothian, I was in a field which occupies part of an old drainage channel but is now for the most part dry. On my left was a hillside covered in gorse bushes and I was aware of rabbit activity in that area. My attention was then drawn to a particular rabbit which was being followed by a smaller animal which was repeatedly leaping up in the air. Binoculars soon showed me that a half-grown rabbit was being pursued by a weasel which was about one third the size of the rabbit.

At this stage in the proceedings I formed the opinion that the rabbit was unconcerned as he was readily able to outrun his pursuer and each time he got out of sight of the weasel he stopped to nibble grass. But the weasel persisted, continually leaping up to try and see his quarry and when eyesight failed, turning to his sense of smell. This was particularly noticeable when rabbit ran down a tractor wheel rut whilst weasel ran down the adjacent rut. On losing the scent trail, weasel ranged round in a circle until re-encountering the trail in the other wheel rut.

The tenacity of weasel appeared to make rabbit more uncomfortable and he adopted a policy of running in circles around a gorse bush in an attempt to lose weasel. Rabbit soon found that this was a mistake as weasel was much quicker on the turn and ran a tighter circle. In some desperation now, rabbit left the bush at speed and made a beeline for where I was standing, with weasel bobbing behind. As rabbit passed within inches of my feet I instinctively adopted the spread-eagle arm-waving posture of a shepherd trying to turn a flock of sheep. This was enough to halt weasel who after a brief examination of me made to pass first on one side and then the other.

I by now felt that I had gained rabbit enough time to make his escape and was surprised to hear a scream close by. On turning round there was rabbit a mere yard behind me squatting rigid with fear. Weasel now ran to the nearby stone dyke and emerged again nearer to where rabbit sat. My arm waving was now diverted to rabbit in an attempt to get him to run away but even a gentle push from a boot could only coax an occasional hop.

I finally gave up and continued my walk, leaving nature to take its course. I expected to hear more screams but heard nothing.

D. Gill

The spider (*Erigone aletris*) in Lothian

A member of the family Linyphiidae, or 'money spiders' (*Erigone aletris*) is known in Britain only from coastal sites in Lothian, having been discovered by Snazell in 1976 in a dune meadow near Gullane and described by him as new to Britain in 1980.

In the Journal for 1986 in a note on 'Rare Spiders in Lothian', the finding of an apparently flourishing colony of *E. aletris* in Leith Docks was mentioned. I suggested then that the docks might well have been the entry point for this species, as it had been known previously only from coastal sites in North America.

Between the above dates another collector, D. Horsfield, had checked the continued presence of this spider at Gullane Bents and had found it further east at North berwick. Its presence at Aberlady had also been confirmed in a collection made by the writer in September 1985.

On 11th October 1987, D.H. and J.A.S. made a joint visit to a number of localities along the coast eastwards from Leith Docks and found *E. aletris* to be still present in numbers at the docks, and also at Fisherrow, Musselburgh, and Seton Sands. A point of great interest on that day was that the specimens taken at Musselburgh were collected from the sea wall actively migrating by 'ballooning' in ideal weather conditions.

Since then searching westwards from Leith at coastal sites as far as Carriden has so far resulted in only a single specimen being collected near Queensferry, some 13 km from the docks. Eastwards from Leith the range covered is at least 33 km.

Considering the westerly nature of prevailing winds the spread appears compatible with the theory of an outward aerial dispersal with Leith Docks as the starting point.

There is an undoubtedly viable population of this spider along the Lothian coast and further expansion of its range might be expected.

J.A. Stewart

Notes from the Hopetoun nature trail - 1989

Easter being in March this year, we opened early in the season and continued till 1st October. Many schools, mostly from West Lothian, had booked a visit to the Trail. Children are always specially welcome.

The foresters had a very busy year. The gales of 13th February brought down several large trees in the parkland. Later storms brought down large branches; and in June several dead elms were felled as they were beginning to drop their branches and becoming dangerous. All the timber was cut and removed to keep the paths open and safe. I'm afraid we shall lose all the elms to the Dutch Elm disease as there were several good flying days for the beetle.

Spring and summer flowers faded quickly in the exceptional heat and by July there were signs of drought. The level of the Round Pond fell dramatically as the inflow became a dribble; grass turned brown and conifers dropped their leaves; while a copper beech already suffering from drought in 1988 quietly died.

However, it was the year of the butterfly. We recorded the Orange Tip for the first time and saw Red Admiral and Small Tortoiseshell which have both been absent in recent summers.

The Red Deer herd, which had increased to about 80 beasts, was divided in September, each half with a splendid stag.

We had a huge and varied show of fungi. Visitors were amused to be shown Chicken-of-the-Woods (*Laetiporus sulphureus*), Beefsteak fungus (*Fistulina hepatica*) and enormous growths of the Giant Polypore (*Grifola gigantea*). Reactions were varied when it was proposed that they should see 'Naked Ladies'. This is *Crocus nudiflorus*, the autumn crocus. Fruits and nuts ripened well and I've never seen so many good blackberries at Hopetoun.

Our later visitors were able to admire the autumn colours. The first geese were flying in when the season ended - a new entry in our diary for the extra fortnight we remained open.

M. Robertson and
I.C. MacLean

Return of a native

Only too often on botanical excursions we find that certain species included in old records have vanished from the scene, so it is particularly pleasing to record the re-appearance of a plant long regarded as extinct in south-east Scotland. This is the Oysterplant (*Mertensia maritima*), which the Checklist of the East Lothian Flora quotes as last recorded near North Berwick in 1865 and at Skateraw in 1867.

A survey of the status of *Mertensia* in the UK was carried out in 1986/87 for the Nature Conservancy Council and published only in 1988; all known sites were mapped, and the estimated total population of 10,866 mature and seedling plants were found in only 50 out of 175 of the 10-km squares in which the Oysterplant had at some time been recorded. The east coast south of Aberdeenshire was shown as completely blank, so it is intriguing to speculate on the origins of just two healthy plants found this summer, some 12 metres apart, on an East Lothian beach. Both flowered well and set seed, so we optimistically look for a greater spread in subsequent years.

M. Watson

Forth island bird counts, 1989

	Craigleith	Lamb	Fidra	Eyebroughy	Inchkeith	Inchmickery	Carr Craig
Fulmar	172	4	168		476	10+	
Cormorant	131	91		52			113
Shag	544	286	124		18	29	25
Great Black-backed Gull	5	1	2				
Lesser Black-backed Gull	350	5	200		x	x	x
Herring Gull	3000	225	650	82	x	x	x
Kittiwake	840	250	705		593		
Common Tern						182	
Roseate Tern						5	
Sandwich Tern						272	
Razorbill	57	41	72		46		
Guillemot	1700	3600	145		44		
Puffin	3000	50	220		2350		

x means present but not counted

All counts are of nests or occupied sites except for those of Guillemot and Puffin which are of individual birds. Once again the RSPB has kindly provided the counts for Inchmickery.

When we first started these bird counts in 1959 it was all a clean page. Little was known of the birds that were there and less about their status. As luck would have it we arrived when the increase in seabirds, which had begun in the early 1900s, was just beginning to 'take off'. Apart from a decade when 'red-tides' had a detrimental effect on numbers of some species there has been a spectacular population boom in most of our breeding seabirds. To illustrate this each species is summarised below.

Fulmar: Inchkeith has always been the main island haunt with just over 100 sites in 1959 rising to 600 in the mid-80s and around 500 now. Tantallon has roughly similar numbers. The total for all the other islands including May was 75 sites in 1959. 30 years later there is a ten fold increase to over 800 sites. Numbers are probably still increasing but at a reduced rate.

Cormorant: First bred in Forth in 1957 (5 nests) reaching a ceiling of around 250 pairs in a little over 10 years. After a ten year lull towards the end of which the Inner Forth was colonised, there was again a spectacular increase to about 380 nests in 1989. There are indications that numbers are levelling off but another few years' counts are required to confirm this.

Shag: In the ten years from 1963 there was a rise from 170 to 500 nests on our islands then a slow decrease, due to 'red-tides' until 1980 (see Journal 1981, p. 16). Since then numbers have trebled from 400 to 1020 nests. Although 'our' birds are still doing well there have been dramatic decreases on the Bass (200 down to 100) probably due to Gannet pressure, and even more so on the May and St. Abbs cliffs. It looks as though the Shag population has 'peaked out' although this has been (wrongly) claimed in previous years by several very knowledgeable experts, so the birds may well have the last laugh and prove us wrong yet again.

The Big Gulls: All of these have had spectacular increases in breeding numbers. Great Black-backed Gulls have spread into Forth and there are now over 10 pairs nesting in spite of quite a few being killed on the May during Herring Gull culls. Lesser Black-backed Gulls first bred on Inchkeith in 1957 and there were 500 pairs some 25 years later. This history is repeated on many of the islands. Herring Gulls are some 8-10 times as numerous as Lesser Black-backed Gulls and have increased just as prodigiously. It may be that the numbers of both species are now static or declining and we will breathe a sigh of relief if this is the case. There can be too much of a good thing with these noisy and domineering characters.

Kittiwake: The pattern of increase is similar to that of the Shag. The 400+ total in 1959 (practically all on Craigleith) peaked at 1250 in 1974 then dropped to 1050 by 1979, the year when the sewage outfall at Leith Docks was cleaned up. Since then numbers have rocketted reaching 2390 nests in 1989 (not including Bass). During our 30 years numbers have doubled on the Bass (to ?2300 nests) and on Craigleith (to 800). Kittiwakes have also colonised the Lamb (now 250 nests), Inchkeith (590) and Fidra (700). This pace of increase surely cannot continue but there is little sign of a slowdown at present.

Terns: In contrast to all other seabirds this group have not done so well in Forth recently. Roseate Terns have fared worst with some 500 pairs shrinking to around 20. This decrease is affecting the whole European population. The cause is obscure and may possibly by cyclical (it recolonised Forth in the 1930s), although predation by humans in their winter quarters in East Africa is currently being blamed. Sandwich Terns too are well down at 270 pairs. This is a volatile species which used to average around 500-600 pairs but has peaked at 1200. The vast shoals of sprats have now vanished from the Forth but it is not known whether this has affected the terns. Common and Arctic Terns have suffered from gulls and rats in the past but numbers, though still on the low side, seem to be slowly recovering.

Auks: This is another success story. Puffins once in hundreds on Craigleith can now be seen in thousands there and on Inchkeith and are also breeding on Lamb and Fidra. Guillemots arrived on the Lamb in 1963 and now number perhaps 2500 breeding pairs. There is a seven fold increase (to 1700 birds) on Craigleith and smaller increases on Fidra and Inchkeith. The much less numerous Razorbill has also done very well. It appears that auk numbers may be levelling off which is perhaps just as well as nesting sites must now be at a premium.

Overall the Forth seabirds are in a very healthy state. The possibility of a horrendous oilspill is always on the horizon but perhaps a greater threat is that posed by the over-exploitation of fishing stocks. In several parts of the world this greed has had catastrophic effects on seabird numbers. In another 30 years the SOC will be able to provide all the answers.

R.W.J. Smith

EXCURSIONS 1989

Key for excursions:

B - botany
F - fungi
G - general
Ge - geology
C - conservation
O - ornithology
T - trees

Day excursions

1989			Leader
21 Jan	Vane Farm RSPB Reserve, Kinross	O	Mr. J. Stevenson
18 Feb	Linlithgow Loch, West Lothian	O	Mr. A. Thom
18 Mar	John Muir Country Park, Tyninghame, East Lothian	G	Mr. R. Anderson
29 Apr	Crichton Glen, Pathhead, Midlothian	G	Mrs. M. Robertson
6 May	Lammermuirs, Long Yester, East Lothian	GO	Miss D. Mack
13 May	The Hirsel, East Lothian	BO	Mr. R. Robinson
20 May	Dunkeld Woods, Perthshire	BO	Mr. D. Adamson
27 May	Pease Dean, Cockburnspath, Berwickshire	BO	Mrs. M. Watson
3 Jun	Hillend, St. David's Bay, Fife	B	Mr. J. Carlyle
3 Jun	Bass Rock with SOC	O	
4 Jun	Lamb and Fidra with SOC	O	
10 Jun	Younger Botanic Garden, Benmore, Dunoon, Argyllshire	T	Mr. I. Sinclair
10 Jun	Craigleith with SOC	O	
17 Jun	Longniddry old railway and Gosford House, Aberlady	BOG	Mr. A. Mathieson
24 Jun	Aberlady Bay, East Lothian with Dundee Naturalists Society	BO	Mr. P. Gordon
1 Jul	Loch Kinardochy, Tummel and limestone pavements near Kinloch Rannoch, Perthshire	B	Mr. D. Adamson, Mr G. McDougall
8 Jul	Peel Woods and Williamhope Farm SSSI, Clovenfords, Peeblesshire, with Central Borders Group SWT	G	Mrs. M. Little
15 Jul	Siccar Point, Cockburnspath, Berwickshire	GeG	Mr. W. Baird
22 Jul	River Tweed, Peebles	OG	Mr. W. Clunie
29 Jul	Mugdock Country Park, Milngavie	B	Mr. D. Hunter, Mr. I. McCallum
5 Aug	Lanrick Castle, Doune, Stirlingshire	G	Mr. G. McDougall
12 Aug	River Tweed, St. Boswells, Berwickshire	G	Mr. D. Gill
19 Aug	River Tyne, East Linton, East Lothian	G	Mrs. C. Stewart
26 Aug	Dunbar Castle and Coast	G	Mrs. M. Watson
9 Sep	Bawsinch, Duddingston, Edinburgh, with Botanical Society of Edinburgh	F	Dr. S. Helfer, Mr. C. McLean
16 Sep	Traquair Minch Moor, Innerleithen, Peeblesshire	G	Mrs. J. Lyburn
8 Oct	Alva Glen, Clackmannanshire	F	
21 Oct	Boghall Farm, Bush Estate, Penicuik	C	Mr. J. Garry
11 Nov	Musselburgh and Aberlady	O	Mr. C. Pountain

Evening excursions

17 May	Roslin Glen SWT Reserve, Midlothian	GO	Mrs. E. Smith
24 May	Habbie's Howe SSSI, Carlops, Peeblesshire	BO	Mr. G. McDougal, Mrs. M. Robertson
31 May	Blackness Meadow, Linlithgow, West Lothian	B	Mr. D. Adamson
7 Jun	River Almond, Cramond, Edinburgh	G	Mrs. M. Robertson
14 Jun	River Almond, Cammo, Edinburgh	G	Mrs. M. Robertson
21 Jun	Liberton Dams, Edinburgh	G	Mrs. J. Lyburn
28 Jun	Pepper Wood and old railway, Kirkliston, West Lothian	B	Mr. J. Carlyle
5 Jul	Currie-Balerno, Midlothian	G	Miss D. Mack
12 Jul	Old railway, Uphall, West Lothian	B	Mrs. M. Robertson
19 Jul	Levenhall Links, Musselburgh	BO	Miss D. Mack
26 Jul	Holyrood Park, Edinburgh	G	Mr. R. Saville

Evening study sessions

16 Jan	Spiders	Mr. J. Stewart
13 Feb	Mosses	Miss H. McHaffie
20 Mar	Freshwater life	Mrs. E. Gillespie
11 Sep	Fungi	Mrs. E.McA. Smith
9 Oct	Fungi	Mrs. E. Farquharson
27 Nov	Farm crops	Mr. D. Gill

These study sessions were held in the Society's room at Donaldson's School for the Deaf.

REPORTS AND ABSTRACTS FROM REPORTS

Linlithgow Loch -- 18 February 1989

For the February outing, the location was Linlithgow Loch. Our leader was Alec Thom, a local resident and a member of the RSPB who is involved with the monthly count of birds using the loch.

At the west end, which is near human habitation, were found the less shy birds: Coot, Mallard, Tufted Duck, Mute Swans, one male Goldeneye and a few Pochard. As we progressed round the loch and away from the houses, we saw Great Crested Grebes at fairly close quarters and were fortunate to observe one pair performing the weed dance of courtship.

At the quiet Blackness end of the loch we could hear, but not see, Little Grebe, and there was a huge flock of Pochard - about 144 - in the lee of a little island which supported a huge willow tree.

For the last half-hour we were the guests of Colonel Ponsonby, who is chairman of the Loch Users' Association. He told us how representatives of the various groups concerned with the birds, the fish and the sailing, both voluntary and national bodies, met and worked together to find solutions to situations when there is a conflict of interest. He also had a pet fox, and we were privileged to see 'Vicky' at play with the Colonel. She was quite unperturbed till she caught sight of some of us at the window and then her wild side came uppermost and she was off. Donning our wellies once more, we thanked Colonel and Mrs. Ponsonby for their hospitality and walked back to the car park.

J. Lyburn

Crichton Glen -- 29 April 1989

The first outing of the summer excursion programme saw 17 members gather at the Crichton Church car park on a dull but dry Saturday morning.

We started out across grassland, which showed little growth so early in the season, towards Crichton Castle. Here we paused to examine the smaller building which was recognised as the ruins of the old stables. As we descended the path to the valley bottom past creamy white clouds of Blackthorn blossom and many lovely patches of Primroses we were thrilled to see three Roe Deer.

The walk down and across the valley and then up the hill towards Borthwick was enriched by bird song - Chaffinch, Willow Warbler, Skylark and many others - and the list of botanical specimens grew apace. The way continued along part of the disused railway line where we saw clumps of Cowslip (*Primula veris*) on the banking and where, after a determined hunt, we found the tiny Common Whitlow Grass (*Erophila verna*), a spring annual which was already setting seed.

A male Yellowhammer posed obligingly on the bare branch of a tree as we had lunch overlooking Borthwick Castle.

On the return journey a Great Spotted Woodpecker flew past and this proved a good omen as the sun began to break through. We dropped down to where the Tyne Water is lined by unusually tall, straight Alders. Here we were joined by many curious cattle who processed with us, pausing when we did, to admire the beautiful Wood Anemones by the river and the golden carpet of Marsh Marigolds on our right.

The list of birds and plant life continued to grow - a Grey Wagtail, a Redstart on the fence, Hard Shield Fern (*Polystichum aculeatum*) - and then came the exciting find of the fungus Green Wood-cup (*Chlorociboria aeruginascens*). This fungus stains rotting logs and branches bright blue-green. It develops green cup-shaped fruit bodies, usually in the autumn. At Tunbridge Wells this fungus, an ascomycete, was once introduced deliberately into wood. The green-stained wood was then fitted together into a pattern with other differently coloured woods, compressed and sliced to be used as a veneer in marquetry. The small wooden boxes, so finished, became known as Tunbridge Ware. This fungus is found particularly in Oak but here was found on rotten wood lying amongst Alder trees.

As the weather was now warm and sunny we were tempted to walk further by the side of the water towards Vogrie and we were rewarded by a second sighting of Roe Deer. We saw the holes made by Water Voles, found Townhall Clock (*Adoxa moschatellina*), Ivy-leaved Crowfoot (*Ranunculus hederaceus*) and Weld (*Reseda luteola*), the last growing out of the wall of the old lime-kiln.

A final scramble up to the car park ended the outing.

M. White

Lammermuir circuit -- 6 May 1989

6th May was a perfect day for a walk in the Lammermuirs - warm and sunny with a light breeze from the north-west. The plan was to climb to the top of Lammer Law by way of the Hopes Reservoir and Bleak Law. So, after meeting at Gifford, our group of 21 members drove south for a further three miles to where the road through Long Yester ends at West Hopes.

The first part of our walk took us up the valley of the Hopes Water. Opposite-leaved Golden-saxifrage (*Chrysosplenium oppositifolium*) was flourishing among the Birch and Willow bordering the burn. There was quite a spread of Juniper (*Juniperus communis*) in the valley. The bushes were showing the green berries of last year and the blue-black fruit of the previous year, the fruit taking two years, and sometimes even three, to ripen fully. The track led up by a gentle climb to the Hopes Reservoir and on this stretch we saw Barren Strawberry (*Potentilla sterilis*), Common Dog-violet (*Viola riviniana*), Bitter-vetch (*Lathyrus montanus*) and Blaeberry (*Vaccinium myrtillus*) in flower.

Crossing the bridge over the watercourse we paused to read the handsomely carved inscription on the parapet which informed that the stone to build the bridge and watercourse had been taken from the Calton Jail in Edinburgh when it was demolished in 1930-31.

Skirting the south side of the reservoir we followed a track which led us through brown, heather-covered hills to the foot of Bleak Law, where we stopped for lunch. Our bird count by this time included Wheatear, Dipper, Willow Warbler, Grey and Pied Wagtails, Robin, Heron, Common Sandpiper, Red Grouse and Meadow Pipit; and a fine specimen of a Common Heath Moth had been captured and examined.

After lunch we climbed Bleak Law and crossed the moor to Lammer Law (527 metres). From the top the views in every direction were splendid, from the Forth islands of the Bass and May in the north to the Cheviots seen dimly through the haze in the south.

On leaving Lammer Law we took a track leading down by the Sting Bank Burn and in this open valley we found Lesser Celandine (*Ranunculus ficaria*) and Wood-sorrel (*Oxalis acetosella*) - some plants with white and others with mauve flowers.

The path led on round the north side of Hopes Reservoir through Willow, Birch and Alder scrub: here and there a Gorse bush (*Ulex europaeus*) made a glorious splash of yellow. We then rejoined our original path for the last leg of the walk. By this time we had added Swallow, Cuckoo (heard) and Skylark to our tally but the final entry for the day was Ring Ouzel, three of which were seen in the junipers near our parked cars.

D. Mack

The Hirsel, Coldstream -- 13 May 1989

A group of 24 members and friends spent a most enjoyable sunny day in the Hirsel grounds and by the River Tweed at Springhill a few miles away.

The party divided into two groups at the Hirsel. The larger, led by a ranger, followed a circular route by the Hirsel House and the River Leet. Of great interest were the nesting boxes for Swifts under the top windows of Hirsel House, all of which seemed to be occupied. Other birds seen or heard included Blackcap, Goldcrest, Sedge Warbler and Grey Wagtail. Trees in the grounds included a Tulip tree planted 250 years ago and a Sycamore and Spanish Chestnut both over 400 years old. Perhaps the most noteworthy sighting, however, was Lord Hume walking with his lady in the grounds!

The second group walked round the Hirsel Lake and made a short foray into Dundock Wood where rhododendrons were just coming into bloom. Among birds on the lake was a large number of Goosanders and some Shovelers.

A picnic by the Hirsel Lake was enjoyed by all before leaving by coach for Springhill.

The main purpose of the walk by the Tweed was to see two pairs of Yellow Wagtails which were nesting in fields bordering the river. We had a splendid view of the birds, looking as yellow as canaries, and a most unusual sight north of the border.

We were reluctant to return to the coach but enjoyed fine views of the beautiful Border countryside on our way home.

M. Clarkson

Roslin Glen -- 17 May 1989

Nineteen members met on this warm, sunny evening for a walk in Roslin Glen under the guidance of Betty and Bob Smith.

But we started the walk in the small stretch of woodland that lies south of the B7003 and between the road and the old railway line. It is here that the Scottish Wildlife Trust plans to establish an Oak wood. The Sycamores and dead Elms on the site are being taken out and the young Oaks, which are being grown on from acorns collected from a nearby old Oak wood, will be planted when they are sturdy enough to survive. There are also Alder, Beech, Birch and Scots Pine in this area but these will be left untouched.

Flowers flourished by the woodland path - Pink Purslane (*Montia sibirica*), Few-flowered Leek (*Allium paradoxum*), Wood-sorrel (*Oxalis acetosella*) and Water Avens (*Geum rivale*) among others. Two Horsetails, the Field (*Equisetum arvense*) and the Wood (*Equisetum sylvaticum*) were examined and the differences between the two plants noted.

On leaving this wooded area, we crossed the road and made our way down into the Glen. The path, which became quite a scramble later, at this stage led us through a fine Beech wood. The Beeches are being allowed to regenerate but the regeneration will be kept under control.

As we descended to the bottom of the glen we moved into mixed woodland again. The SWT has a planting programme for this area too, and several hundred young trees have already been put in.

Dog-violet (*Viola riviniana*), Field Forget-me-not (*Myosotis arvensis*), Wood Anemone (*Anemone nemorosa*), Blaeberry (*Vaccinium myrtillus*) and Leopard's-bane (*Doronicum pardalianches*) were found here, along with two ferns, Hard Fern (*Blechnum spicant*) and Oak Fern (*Gymnocarpium dryopteris*). And, alas, one must also record midges, a swarm of which joined us as we made our way up to the road again.

Birds seen and heard during the evening included Goldfinch, Chaffinch, Blackcap, Willow Warbler, Robin, Swift, Song Thrush and Mistle Thrush.

Mr. and Mrs. Smith gave us a most enjoyable and interesting evening.

D. Mack

Dunkeld Woods -- 20 May 1989

Dunkeld's woods and hills were visited by the Society for a fifth successive year. An area of conifer plantation and semi-natural broadleaf woods to the north-east of the ancient city was explored, together with more open, rocky moorland around three small lochs to the west of Deuchary Hill. The area has long been afforested by Atholl Estates, and faces the extensive Craigrinean Forest on the west side of the Tay. The steeper, rockier ground has been largely planted with larch, while some very damp ground supports Sitka and Norway Spruce. Other prominent conifers in the plantation were Douglas Fir, Lodgepole Pine, Noble Fir and Grand Fir. Many fallow deer were seen, both within the woods and in adjacent fields. Listening to the strident cacophony of innumerable Black-headed Gulls, the party lunched beside the Mill Dam Loch. Two pairs of Canada Geese, some Wigeon, a rather dead Pike and an Adder skin were items of note on and around the three small lochs. Twelve species of fern were seen, many sheltering on the craggy rock outcrops to the north of the Mill Dam Loch. These crags also support a few juniper bushes. A more impressive and flourishing juniper colony was examined near Birkenburn, where an Orange Rust (*Gymnosporangium clavariforme*) had established itself on many of the trees.

After a pleasant stroll past groves of Oak, Alder, Aspen, aromatic Black Poplar and Cypress, the party concluded the outing with the examination of a curious Fern-leaved Beech having both familiar beech leaves and the ferny fronds responsible for its name. A smaller version of the same was seen on the outing to Newhall Estate four days later.

D. Adamson

Habbie's Howe, Carlops -- 24 May 1989

Habbie's Howe is a recently declared SSSI, four miles south-west of Penicuik, lying between the hamlets of Amazondean and Kitleyknowe in Midlothian. Our visit on Wednesday evening occurred during Wildflower Week. We welcomed members of the Botanical Society of

Edinburgh and the NCC who had joined us. A downpour of rain greeted us at the time of assembly and sent us all scurrying to the cars for shelter. Thereafter we had a damp walk, darkened by lowering skies and the dense tree canopy in the narrow ravine, but we had a tantalisingly brief glimpse of a very interesting site.

To reach Habbie's Howe we entered the estate of Newhall House by kind permission of Miss McLaggan, the present owner. The house stands on the site of a convent and is a romantic place, surrounded by minor buildings and statuary. In the eighteenth century, Newhall was owned by Sir David Forbes. Allan Ramsay was a frequent visitor and Sir David and the Carlops area inspired his pastoral comedy *The Gentle Shepherd*.

Downriver from Newhall, the North Esk leaves the tree canopy of the estate and flows through a narrow valley. Grass by the riverside is heavily grazed. The Esk is joined here by a tributary made up of the Carlops, Back and Harlowmuir Burns. This was the extent of our walk. The long ravine of the Harlowmuir Burn was a haunt of the Covenanters. An outcrop of rock, Harbour Craig, gives a commanding view of the countryside and was an outlook post.

Leaving Newhall, we walked through parkland, passing Mary Crichton's Bower, a round stone shelter with a thatched roof and pointed windows, and descended by steps to Peggy's Pool, a waterfall at the foot of the glen. From here the walk continued along the course of the North Esk until we left the estate not far from Lonelybield.

The glen is rich botanically and attracts many species of birds. Shade- and moisture-loving mosses, liverworts and ferns abound. We were delighted to find an extensive spread of Oak Fern, and further on we saw Melancholy Thistle, both quite rare in the Lothians. Pick-a-back-plant (*Tolmiea menziesii*) spreads by the stream and on its banks are Flag Iris, Luzula species, several sedges, Wood Horsetail and Bugle, as well as the more usual woodland flora. We only had a quick look in the time available and all agreed that a more leisurely visit would be very rewarding.

Many trees and ornamental shrubs have been introduced. There is a well-shaped Wellingtonia and a small cut-leaved Beech recently planted. Giant Douglas firs grow well on the slopes. Among the ornamentals, the lovely Bird Cherry was in flower. Viburnum species, Philadelphus, Azalea, Mountain Currant (*Ribes alpinum*) and Rhododendron were noted. Hazel, Rowan, Hawthorn and Alder are present with mature Oak and Beech trees.

There was little bird song because of the rain but we heard Goldcrest, Willow Warbler, Blackcap and Song Thrush. We found the corpse of a young Tawny Owl.

We returned to the estate and crossing a footbridge walked on the north bank of the river passing the walled garden which we would have loved to explore for old herbs and medicinal plants. It is set out in a cruciform Scots layout with two vines and a heated melon pit with an iron chimney.

I wish to express the Society's thanks to Miss McLaggan for her kindness and cooperation which made the visit possible.

M. Robertson

Pease Dean Reserve, Cockburnspath, Berwickshire -- 27 May 1989

This meeting served to introduce the ENHS to a new Scottish Wildlife Trust reserve, officially opened only the week before, and was also included in the list of walks publicised for the National Wildflower Week. The weather could scarcely have been better, with warm sunshine and a light breeze for the whole day. Pease Dean Wildlife Reserve covers over 70 acres of woodland along the deep valleys of the Tower and Pease Burns, but the present public access path takes in only the open ground above Pease Bay and a circular walk in the lower Pease Dean.

The ENHS group were joined by representatives of the Botanical Society of Edinburgh and three or four members of the public, but it must be admitted that the slow progress of the botanists led to the completion of the circuit by the more energetic walkers well in advance of the rearguard! But even taken as no more than a country walk, this is scenically a most attractive route, starting through flat meadows with Gorse, Broom, Willow and Alder; Crosswort and Red Campion the most conspicuous flowers; and Sedge, Willow and Garden Warblers, Robin, Yellowhammer and Wren all heard. After the junction of the Pease and Tower Burns, the climb began with considerable aid from the new steps, up the moist bank dotted with Golden Saxifrage, Wood Sorrel and even late-flowering Primrose to the path which runs high above the west bank of the dean. Here we walked through mature woodland of Oak, Ash and Elm (some already dead or dying) with much invasion of Sycamore; a shrub layer of Hazel, Elder and Gorse, with Honeysuckle and Dog Rose; and a ground cover of Dog's Mercury, Wood-rush, Ramsons and ferns, including the local rarity, the Soft Shield Fern (*Polystichum setiferum*).

After crossing the Pease Dean by the fine eighteenth century arched bridge, the path joins a section of the Southern Upland Way back towards the sea, first between arable fields and steep scrub slopes where Blackthorn, Hazel, Hawthorn and Elder predominated. Plenty of birdsong here as we continued to add to the flower-list - no rarities but much interest in distinguishing between species of, for example, Forget-me-not, Wood-rush, Speedwell or Vetch. The Bluebell glades were past their best as we descended into woodland again. One curious area was a heavily-eroded but now waterless gully, bare of vegetation under close Sycamore cover. A rabbit-warren nearby had probably contributed to the desolation! Back in the valley-bottom, a stand of the poisonous Hemlock Water Dropwort (*Oenanthe crocata*) was noted beside the Pease Burn before we returned to our starting-point for a very late lunch. In the afternoon some of the party explored the seashore and the steep grassed 'cliffs' on the south side of Pease Bay, finding many plants of Rock-rose (*Helianthemum nummularium*) not yet in flower. A full plant-list of the day is with the Records Secretary.

M. Watson

Erratum: I regret that the final sentence of the report in the 1988 Journal on the Dunglass Estate excursion on 11 June has caused bewilderment to some knowledgeable readers. I mentioned the finding of a Beautiful Silver Y moth, which does not exist; the specimen which I inadvertently devalued was the Beautiful Golden Y (*Autographa pulchrina*). My apologies to the entomologists. (M. Watson)

River Almond, Cramond -- 7 June 1989

In 1987 we walked along Silverknowes foreshore and visited Cramond Island. In 1988 we explored the shore along the Dalmeny Estate between South Queensferry and Cramond. The River Almond separates the two areas, so this year we decided to explore its banks, starting from where it joins the Firth of Forth and walking upstream as far as Cramond Brig.

It is a walk we have done several times before, but it is always interesting to note changes taking place. Many of the trees, particularly Elms, overhanging the path, have been removed, thus letting in more light and allowing the herbaceous layer to develop. The biggest change is in the housing development from the foot of School Brae to beyond Cadell's Row cottages, and the landscaping of slopes above which the new houses stand. Vandals have destroyed many of the saplings planted.

The west bank of the river, belonging to the Dalmeny Estate has been clear-felled and replaced with young trees. Here we noted a rich field layer with Russian Comfrey, Dame's Violet and Pink Purslane predominant. Many ferns grow on the shady east bank, including Soft Shield Fern (*Polystichum setiferum*), which we have not seen previously. The Pick-a-back-plant (*Tolmiea menziesii*) still flourishes beside the ruins of Fair-a-Far Mill. Our biggest surprise was the extensive spread of Saracen's Woundwort (*Senecio fluviatilis*) beside the excavations of the Roman Bath House, behind the car park in Cramond Village itself.

M. Robertson

Younger Botanic Garden, Benmore -- 10 June 1989

The second bus trip of the season was to the Younger Botanic Garden at Benmore, seven miles north of Dunoon, Argyll, between the head of Holy Loch and the foot of Loch Eck.

This garden is one of three outstations of the Royal Botanic Garden, Edinburgh. It covers 120 acres and grows mainly conifers and rhododendrons, although it is about to grow Berberis from China and the Himalayan chain.

After two hours spent exploring the garden and climbing up to the viewpoint, where we had lunch, we congregated at the tea-room to meet the Garden Supervisor, Ian Sinclair, who took us on an instructive and entertaining tour of part of the policies.

Before entering the garden we crossed a bridge and saw Royal Fern (*Osmunda regalis*) growing beside the river. Right at the entrance is an impressive avenue of Redwoods (*Sequoiadendron giganteum*). These were planted in 1863 when a tea-planter, Piers Patrick, owned the estate. A Sequoia can live for three and a half thousand years, so these, at 126 years old, are in their infancy. Here, where there are no extremes of temperature and the average yearly rainfall is 90 inches, rhododendrons grow particularly well. At the entrance to the Formal Garden we passed beds of yellow, pink and red flowers with different varieties of the same species displayed together. The ground round the plants was covered with a mulch of wood chips made on the estate from trees that had to be felled. Near the rhododendron beds were two species of Spruce - the Oriental Spruce (*Picea orientalis*) which bears the shortest needles of any spruce, and the Sitka Spruce (*Picea sitchensis*) with its buttresses of reptilian scaliness, to use one of Mr. Sinclair's descriptive phrases.

In January 1968 when there was a bad storm with hurricane force winds, over 500 trees, of over 120 feet in height, came down and it took four years to clear the debris. During that time the future of the garden was uncertain. Fortunately it was decided to retain it. In the cleared areas shrubs from all over the world were planted.

There is a formal garden but for ease of maintenance it is now mainly grass with four central beds planted out with ornamental conifers and the herbaceous border contains no plant that will grow higher than two and a half feet, thus obviating staking. In bloom were beautiful blue *Meconopsis*.

A *Rhododendron occidentale* gave off a delicate perfume as we came to the gate leading to the lower hill slopes which were covered with Hobbie hybrids and other rhododendrons. In all there are well over 250 botanical species in the Garden.

By now the rain was pouring down and we had to cut short the tour to keep in the shelter of the trees. An enormous Western Hemlock (*Tsuga heterophylla*) with its long, drooping leading shoot and the biggest European larch (*Larix decidua*) I had ever seen were situated near Benmore House which is now an Outdoor Education Centre belonging to Lothian Region. A tree new to many of us was the Dawn Redwood (*Metasequoia glyptostroboides*) or the Fossil Tree, having been rediscovered in China in 1941. A new tree family, the Eucryphiaceae, of which we saw specimens of Nymans Hybrid Eucryphia. There were also many species of Magnolia and near the end of the tour we saw a Japanese Umbrella Pine (*Sciadopitys verticillata*) whose long, narrow leaves are fused in pairs and arranged in whorls round the branches like the spokes of an umbrella. We regained the avenue of Redwoods and once through the gate were at the end of the tour.

On the outward journey we travelled via the ferry between Gourock and Dunoon. On the homeward journey we drove the whole way, passing Loch Eck, the north end of Loch Fyne, then Loch Long and came down Loch Lomond on the new road which led to the Erskine Bridge, then the M8 and Edinburgh.

J. Lyburn

River Almond, Cammo -- 14 June 1989

Our second exploration of the River Almond started at Cramond Brig. From the hotel car park, we took the path leading under the road bridge, on the west side of the river. Here we found a lush growth of shrubs, herbs and grasses, including Water Figwort, Greater Willowherb, Tansy, Dame's Violet and Reed Canary Grass. Further upriver on the east bank were Giant Valerian and Solomon's Seal, the latter probably a garden throw-out.

Many large trees give dense shade along the river bank, and Beech, Hornbeam and Hazel were noted. Crossing the footbridge over the river we entered Cammo Estate grounds where there are many fine old specimens of Lime and Oak; also a new plantation of broad-leaved trees. Deodar Cedar, Monkey Puzzle and Giant Sequoia grow near the ruined house where a few ornamental shrubs survive - Portuguese Laurel, Honeysuckle, Philadelphus, Holly and Privet.

Leaving Cammo grounds we returned via Cammo Road and a snicket leading us back to the river, where the path rises to the main road opposite the starting-point.

M. Robertson

Aberlady Bay -- 24 June 1989

The visit to Aberlady Bay Nature Reserve was a joint outing with the Dundee Naturalists' Society and 38 of us gathered at the Timber Bridge on this cool, cloudy morning. A strong breeze was blowing from the west and the temperature did not at all suggest midsummer day. Peter Gordon, the Warden of the Reserve, and a colleague, Neil Clark, met us and it was decided to split the rather large party into two groups and to meet again for lunch at Gullane Point.

The plant life of the reserve is of great variety and abundance and we recorded 90 species during the day.

Marsh Stitchwort (*Stellaria palustris*), which disappeared from the reserve about ten years ago after some clearance work, is now establishing itself again; as are Lesser Water-plantain (*Baldellia ranunculoides*) and Brookweed (*Samolus valerandi*), both of which were down to one plant each in recent years.

Mr. Gordon showed us a clump of Rush-leaved Fescue (*Festuca juncifolia*). This is nationally rare, although it is also found at Gullane, Tyninghame and on sites in Fife and Angus.

Particularly eye-catching were the orchids, Early Marsh (*Dactylorhiza incarnata*), Northern Marsh (*Dactylorhiza purpurella*) and Common Spotted-orchid (*D. fuchsii*); and also some fine Melancholy Thistles (*Cirsium helenioides*) and sturdy spikes of Viper's-bugloss (*Echium vulgare*). Bogbean (*Menyanthes trifoliata*) was in flower as was Bog Pimpernel (*Anagallis tenella*) and Sea Wormwood (*Artemisia maritima*) was seen, and sniffed, on the rocks near our lunch site.

Among the birds seen at Gullane Point were Common Scoter, Puffin, Bar-tailed Godwit, Red-breasted Merganser and Arctic and Sandwich Terns. Coot and Moorhen, both with young, were on Marl Loch and, over the saltmarsh and grassland of the reserve, Redshank, Lapwing, Lesser Whitethroat, Sedge Warbler and Linnet were noted. But my favourite of the day had to be the male Reed Bunting that landed on a reed only a few feet away and actually stayed there for several seconds!

Our entomological tally included Meadow Brown and Common Blue butterflies, Six-spot Burnet moths and the caterpillars of the Cinnabar Moth. Three Common Toads and a Smooth Newt were found lurking under some wooden planks on the marsh.

To visit Aberlady Bay under such expert guidance as we had on this outing is indeed a great pleasure.

D. Mack

Loch Kinardochy, Tummel and Limestone Pavements, Kinloch Rannoch -- 1 July 1989

The first part of the day's excursion was to a disused quarry on the B846, situated next to Loch Kinardochy (Aberfeldy to Tummel Bridge road). This is a remote moorland setting under the shadow of Schiehallion, which was hidden in the clouds but by the afternoon these had cleared. As well as the botanical interest, there was an interesting reminder of the past in the form of a lime kiln, built about 1865, to replace numerous smaller kilns. It continued in operation until 1900. The lime produced was used to fertilise the land.

Amongst the plants found were Yellow Saxifrage (*Saxifraga aizoides*), Eyebright (*Euphrasia officinalis*), various hues of Milkwort (*Polygala vulgaris*), Woundwort (*Stachys* sp.), Mountain Everlasting (*Antennaria dioica*), Mountain Pansy (*Viola lutea*), Marsh Thistle (*Cirsium palustre*), Mouse-ear (*Cerastium fontanum*), Thyme-leaved Sandwort (*Arenaria serpyllifolia*), Lesser Twayblade (*Listera cordata*), Alpine Speedwell (*Veronica alpina*), Thyme (*Thymus praecox* ssp. *arcticus*), Plantain (*Plantago* sp.), Gentian (*Gentianella* sp.) and Fairy Flax (*Linum catharticum*). The Gentian was not in flower. We also found Red Fescue (*Festuca rubra*) and 10 different sedges, including Flea Sedge (*Carex pulicaris*).

After leaving this location, we then experienced our first incident which made the trip memorable for more than just natural history. To reach the limestone pavement on the road between Loch Kinardochy and Kinloch Rannoch the coach had to negotiate a very awkward turn from the main road onto the minor one, in terms of gradient and angle. To make it more difficult there was a boundary fence beside the minor road. Eventually some otherwise perfectly responsible members attempted to dislodge the officially erected road sign which was in the way of the coach's turning circle - much to the amusement of those in the coach. The sign stood its ground, obliging us to turn around further down the road, so enabling us to negotiate the road junction from the other direction.

On reaching the limestone pavement area our troubles began again when the coach got stuck in the side of the road, when trying to park. Before making our way to the top of the hill above us where the limestone pavement was, we discovered some Fragrant Orchids (*Gymnadenia conopsea*), Rock-rose (*Helianthemum nummularium*) and Alpine Bistort (*Polygonum viviparum*). A Damsel Fly also put on a display for us.

The limestone pavement covered a fairly small area and was characterised by a bare rock surface forming blocks separated by cracks, some of them quite deep. This formation arose through the scouring action of glaciers in the Ice Age. Subsequent solution by rain water then opened up the cracks. They created the special shady conditions for woodland type vegetation to flourish in. The plants found here and on the surrounding area were Thyme, Yellow Saxifrage, Gentian, Germander Speedwell (*Veronica chamaedrys*) and Dog's Mercury (*Mercurialis perennis*). Also present was Lily of the Valley (*Convallaria majalis*) and Herb Robert (*Geranium robertianum*).

We now thought that surely no further mishaps could happen. Suddenly, from the back of the coach came the cry that there was a bumping noise from the back wheels. It was due to a boulder which had lodged itself between one of the sets of rear double wheels - possibly picked up when we left the limestone pavement area.

Stopping near Loch Rannoch some of us walked down to the lochside to come across Cow-wheat (*Melampyrum pratense*), Chickweed Wintergreen (*Trientalis europaea*) and Melancholy Thistle (*Cirsium helenioides*).

R. Clark

Currie, Balerno -- 5 July 1989

Seven members met for this walk on an evening of warm sun and southerly breeze.

The path of the old railway line runs alongside the Water of Leith and passes through woodland, mostly of Sycamore, Beech, Ash, Wych Elm, Elder and Hawthorn. Birds were heard and seen flitting through the trees - Great and Blue Tit, Wren, Chaffinch and Willow Warbler - and a Garden Warbler gave us the pleasure of his song for several minutes.

Along the path, Meadow Crane's-bill (*Geranium pratense*), Meadowsweet (*Filipendula ulmaria*), Rosebay Willowherb (*Epilobium angustifolium*) and Hedge Woundwort (*Stachys sylvatica*) predominated but we also found two St. John's-worts, Hairy and Perforate (*Hypericum hirsutum* and *H. perforatum*). Down by the river, Reed Canary-grass (*Phalaris arundinacea*) and an abundant spread of Leopard's-bane (*Doronicum pardalianches*) flourished and we also spotted a clump of particularly rich orange Monkeyflower (*Mimulus* sp.).

On leaving the railway path, we skirted the National Trust garden at Malleny and returned to Currie by Lymphoy Road. Once again our route was tree-lined and we passed some fine specimens of Lime, Horse-chestnut, Beech, Sycamore and Sessile and Pedunculate Oak. Bush Vetch (*Vicia sepium*), Meadow Vetchling (*Lathyrus pratensis*), Red Campion (*Silene dioica*) and Wall Lettuce (*Mycelis muralis*) were noted and a cluster of the fungus *Coprinus atramentarius* was found growing by the roadside.

A very pleasant evening walk.

D. Mack

Peel Woods and Williamhope Farm, Clovenfords, Peeblesshire -- 8 July 1989

This was a most enjoyable outing with our friends from the Central Borders Support Group, Tweed Valley Branch, Scottish Wildlife Trust. The party numbered 29 (15 from Edinburgh) and we were under the enthusiastic guidance of Mrs. Margaret Little.

The morning was spent exploring Peel Woods, a stretch of old, mixed woodland of Beech, Sycamore, Ash, Alder, Hazel, Birch and Rowan. Several woodland plants were noted - Wood Crane's-bill (*Geranium sylvaticum*), Wood Dock (*Rumex sanguineus*), Yellow Pimpernel (*Lysimachia nemorum*), Marsh Valerian (*Valeriana dioica*) and Enchanter's Night-shade (*Circaea lutetiana*) among others.

The party became scattered on the walk through the woods but we all met up again for lunch on a grassy bank by the road leading to Williamhope Farm.

After lunch we continued up the road to the farm. Wild flowers grew everywhere in great abundance and variety, and among many others identified were Fragrant Agrimony (*Agrimonia procera*), Fragrant Orchid (*Gymnadenia conopsea*) and Heath Spotted Orchid (*Dactylorhiza maculata*), two St. John's-worts, Square-stalked and Slender (*Hypericum tetrapterum* and *H. pulchrum*) and four Bedstraws, Lady's (*Galium verum*), Heath (*G. saxatile*), Marsh (*G. palustre*) and Fen (*G. uliginosum*). In all, 61 species of wild flowers were recorded.

The bird count for the day included Sparrowhawk, Heron, Redstart, Spotted Flycatcher and Bullfinch among the more commonly seen Pied and Grey Wagtails, Meadow Pipit, Wren and Willow Warbler.

Six butterflies - Ringlet, Northern Brown Argus, Meadow Brown, Common Blue, Dark Green Fritillary and Green-veined White - were identified, as were two moths - a Mottled Beauty and a Chimney Sweep.

Altogether, a rich day of great variety.

D. Mack

Old Railway, Uphall -- 12 July 1989

On Wednesday evening, 12 July, a few members of the Society walked from Uphall Station, West Lothian along the old railway-track to an area where shale was extracted for the now-defunct shale-oil industry.

There are several distinct habitats: (a) the arid conditions of the railway track, (b) the scrub which has grown beside it, (c) the industrial spoil heaps or bings of West Lothian, (d) the disturbed land and deposits of soil where building development is taking place, (e) a little agricultural land, namely two barley fields, (f) a tarry pond with a wet area beside it, and (g) a series of wet meadows in the hollows where the shale was removed or where there is subsidence. It becomes gradually drier as you move eastwards until you come to hay meadows. Roman Camp is within walking distance. Hawthorn and Willow provide a good habitat for birds, notably the Whitethroat and Yellowhammer, while it is a good place for insects, being free of pesticides and herbicides (apart from the barley fields).

Considerable interest was aroused at the richness of the botanical and other species we discovered. The variety of sedges alone was surprising and then we found an orchid meadow, though of only one species, the Common Spotted Orchid.

I think we should return to have a better look at this fascinating place and perhaps combine it with a look at Roman Camp. As usual, lists are with the Records Secretary.

M. Robertson

Siccar Point, Cocksburnpath, Berwickshire -- 15 July 1989

The Society met at the Pease Bay caravan site car park and proceeded by road to Old Cambus quarry. Parking at the now-disused quarry, members set forth to examine the spoil heaps for fossils. Within a short time fine specimens of Graptolites had been found and also trace fossils showing the feeding trails of bottom-living invertebrate animals. The group then walked north-east over the grass fields to the coast at Siccar Point. Here we descended to the sea to examine the famous unconformity discovered almost exactly 200 hundred years before by James Hutton and his friends Hall and Playfair. At Siccar Point the almost vertically bedded Silurian rocks are overlain unconformably by nearly horizontally bedded rocks of the Old Red Sandstone. This evidence of succession and the structural differences between the beds of the Silurian and the Old Red Sandstone did much to help develop Hutton's ideas of the uniformitarian nature of geological processes. Lunching at Siccar Point we mused on the day that Hutton and his friends, from their little sailboat just offshore, had spotted the differences in the rocks and come ashore to find as Hutton describes, "A beautiful picture of this junction washed bare by the sea".

After lunch we walked west along the cliff path stopping at the ruins of St. Helen's church where we examined the old tombstones and noted fine examples of carious weathering in the sandstones of the west wall of the old church. The group then returned to the beach at Greenheugh Point where we looked at current bedding in the lovely pink- and cream-coloured rocks of the Upper Old Red Sandstone. We were also very lucky at this locality in finding fossil plates of the armoured fish *Bothriolepis hicklingi*. The party finally returned to the quarry entrance by following southwards the valley of the small burn that runs into the sea just east of Greenheugh Point. In the valley several interesting plants and butterflies were noted which gave added pleasure to an excellent day of fine weather and superb geological scenery.

W.J. Baird

References:

'Siccar Point by G.Y. Craig in *Lothian Geology* (1986) published by Scottish Academic Press for the Edinburgh Geological Society, pp. 146-51.

'Geology of the Eyemouth district' by D.C. Greig *et al.* (1988) published by HMSO for the *British Geological Survey*, pp. 33-4, 56, 69-71 and pl. 1.

Levenhall Links, Musselburgh -- 19 July 1989

After a hot day it was very pleasant to have a cool north-easterly breeze for the evening visit to the Levenhall Links area at Musselburgh. Ten members attended.

From the car park by the boating pond we walked down to the sea wall and there two telescopes were set up to see what bird life could be found. We were rewarded by the sight of Gannets out in the Firth and quite large parties of Great Crested Grebes and Manx Shearwaters, numbering about 20 and 30 respectively. Lesser Black-backed and Black-headed Gulls were spotted nearer the coast, and Common and Sandwich Terns and a Common Sandpiper were identified flying overhead.

The rough grassland of the area was rich in flowers. Spear and Creeping Thistles (*Cirsium vulgare* and *C. arvense*) grew in abundance. Mugwort (*Artemisia vulgaris*), Weld (*Reseda luteola*) and two Oraches, Grass-leaved and Frosted (*Atriplex littoralis* and *A. laciniata*) were found as were Alsike Clover (*Trifolium hybridum*), Kidney Vetch (*Anthyllis vulneraria*) and Hairy Tare (*Vicia hirsuta*). Less-common plants discovered were Ribbed Melilot (*Melilotus officinalis*), Lucerne (*Medicago sativa*) and Common Mallow (*Malva sylvestris*). A viviparous White Clover (*Trifolium repens*) was found and examined, whose seeds, instead of dispersing in the usual way, had germinated while still on the flower head and soon the little plantlets would drop to the ground to begin their independent lives.

D. Mack

Holyrood Park, Edinburgh -- 26 July 1989

Ten members gathered for this walk led by Bob Saville, a ranger with the Scottish Wildlife Trust. It was a fine evening, warm and sunny with a light breeze.

The first part of the evening was spent in Hunter's Bog and here we were shown two plants of Adder's-tongue (*Ophioglossum vulgatum*) that had been discovered growing in the long grass a little way from the path: a significant find as this fern was last recorded in Midlothian in 1865.

Hunter's Bog was drained in the middle of last century, the water being channelled down to St. Margaret's Loch, but there is a plan being considered at present to allow the area to revert to bogland.

No grazing is allowed in the park now, the last sheep having been removed ten years ago, so plants are steadily establishing themselves. Four hundred and twenty species have been recorded, including 45 grasses.

Horsetails, both Field and Water (*Equisetum arvense* and *E. fluviatile*) grow abundantly and we found a clump of Purple Loosestrife (*Lythrum salicaria*) by a small, muddy pool. Greater Bird's-foot-trefoil (*Lotus uliginosus*), Devil's-bit Scabious (*Succisa pratensis*), Sweet Vernal-grass (*Anthoxanthum odoratum*), Quaking-grass (*Briza media*), Hard Rush (*Juncus inflexus*) and Autumn Hawkbit (*Leontodon autumnalis*) were noted, and as we climbed out of Hunter's Bog at the southern end Mr. Saville pointed out a Crag Whitebeam (*Scorbus rupicola*) growing on the cliff face to our left.

After that it was eastwards along Queen's Drive to examine one small cluster of Forked Spleenwort (*Asplenium septentrionale*) that had been found on the rock face. A rarity this, as it has only been recorded at thirteen sites in the whole of Britain.

We returned to the car park by the Radical Road, adding to our list on the way Burnet Saxifrage (*Pimpinella saxifraga*), Viper's Bugloss (*Echium vulgare*), Common Knapweed (*Centaurea nigra*) and Mugwort (*Artemisia vulgaris*) among others. We also saw a curious little patch of Harebells or Scottish Bluebells (*Campanula rotundifolia*) with stalks so short that the flowers were barely raised above the rounded basal leaves, giving the plant quite a different character.

Several Kestrels had been hunting over the hill during the evening and we also had the company of Meadow Pipits and Linnets.

Bob Saville gave us a very enjoyable and interesting evening, not only enlightening us on natural history but also on the geology of the area and, in lighter vein, on the folklore attached to some of the plants we had seen.

D. Mack

Lanrick Castle, Doune, Stirling -- 5 August 1989

Lanrick Castle is a derelict and crumbling building on the banks of the River Teith. Its grounds are used for the grazing of sheep and the rearing of pheasants. The latter enjoy the cover provided by extensive plantation of tall conifers and a shrub layer dominated by Rhododendron. These lands have been owned by several important families over the past few hundred years, but the nineteenth-century developments by William Jardine, of Jardine Mathieson fame, are responsible for much of the present character of the estate. The ornamentation of the buildings and of its grounds accord with the fashions then prevalent. When these developments were taking place the most prominent tree would be that built from stone as a monument to the Clan McGregor.

The Elms and Sycamores in the surrounding enclosure have grown to dominate and obscure this folly, while the tall Douglas firs, Hemlocks, Beech and Oaks face one another across the river and cast deep shadows over old stables and the remains of a walled garden and lodge. Among the non-arobreal items of natural history were a bat in flight, abandoning its daytime roost when confronted with inquisitive naturalists, and a Barn Owl whose daytime siesta was similarly disturbed.

Although most flowers were past their best and the dry weather had discouraged fungi, there was a good variety of ferns to encourage the botanists and stinkhorn fungi in various stages of development for the mycologists in the party. Apparently the stinkhorn 'egg' is edible and smells of cabbage. The mature version is less attractive.

Thanks to the cover of trees the large turnout was protected from the rain and an interesting outing concluded with thanks to the leader.

D. Adamson

River Tweed, St. Boswells -- 12 August 1989

Eighteen members met at St. Boswells for this riverside walk. Leaving the cars at Mertoun village hall we walked down to Mertoun bridge and then followed the River Tweed downstream to Mertoun House. This involved following a large loop in the river and on the inside of the loop an area of shingle bed carried an interesting assortment of plants. The long, dry summer had apparently left the bed exposed for a long time and allowed plants to develop to a fair size. Some Tomato plants were even bearing fruit.

Passing through Mertoun House policies and arboretum we saw a well-maintained dovecot dated 1567 before returning to the Tweed and continuing downstream. Large numbers of Mallard were seen on the river along with frequent Heron sightings. Sand Martins were still occupying their nest sites in the river bank. Opposite Littledean Tower we left the river to return via field tracks to the cars. Fields of wheat and barley were looking bright and clean as they approached harvest.

We drove through showers on our way to the Borders but during our walk it remained warm and dry with a refreshing breeze.

D. Gill

River Tyne, East Linton to Hailes Castle and Traprain Law, East Lothian -- 19 August 1989

A sunny, cloudless day, but a very high westerly wind and very dry - the grass is brown, the river low, and a fire has recently devastated the top of the wood.

The walk along the river is maintained by the East Lothian District Council. The wood was once an old garden for there are ancient fruit trees as well as Oak, Ash, Willow, Yew, etc, and in spring the wood is carpeted with daffodils.

Parties of Spotted Flycatcher and Long-tailed Tits flitted in the branches and Dippers and Moorhens inhabited the river.

Water Forget-me-not (*Myosotis scorpioides*), Small Balsam (*Impatiens parviflora*), Branched Bur-reed (*Sparganium erectum*) and Reed Sweet-grass (*Glyceria maxima*) grew on the riverbank and Black Spleenwort (*Asplenium adiantum nigrum*) at one point under rocks where the river runs through a small gorge.

Some members visited Hailes Castle, then walked along lanes to Traprain Law (a settlement of the Votadini tribe before and during Roman times). Three brown Hares ran in the harvested barley fields, while two Kestrels hovered over the hill. Energetic folk climbed the Law and had excellent views of East Lothian. A quarry, now fortunately disused, has carved away a section of the hill.

Walking back to East Linton by Kippielaw we saw a herd of about 50 goats grazing the riverbank.

C. Stewart

Dunbar Castle and Coast -- 26 August 1989

Unremitting heavy rain (albeit the first for weeks in this area) and very poor visibility led to a concensus of opinion among the six members who gathered at the Castle car park that the proposed shelterless excursion would be no pleasure for anyone. The weather forecast, correctly as it turned out, offered no prospect of improvement before evening, so after a cheering coffee in a Dunbar café we dispersed.

A pity, since a reconnaissance of the walk a few days earlier had shown plenty of botanical interest, including Pellitory-of-the-wall, Centaury, yellow Scabious, Felwort and Grass-of-Parnassus among the less common flowers, and a good variety of bird life in the John Muir Country Park. Perhaps another year ...?

M. Watson

Minch Moor, Traquair, Peeblesshire -- 16 September 1989

Twenty-four people met at the starting-point which was the village hall at Traquair. From there we followed the centuries-old route over the Minch Moor.

To begin with the track is part of the Southern Upland Way and goes up the hill on a rough, cobbled vehicle-track with a hedge on the right. It becomes grassy but widens as it passes through fields, winding up left into the forest of Spruce and Larch. Here we found many fungi, the orange peel fungus (*Aleuria aurantia*), False Chanterelle (*Hygrophoropsis aurantiaca*), *Boletus badius* and *Suillus luteus* and some tiny Mycenae. Our way crossed a forest road and led steeply upwards and we passed an abandoned shooting butt in the trees, a reminder that once this was open hillside. Eventually we came out of the forest and, looking back, had extensive views of Innerleithen, the River Tweed and the surrounding hills. The heather was nearly over, just a few flowers here and there. The blaeberries were quite plentiful and beside the track was one large patch where the leaves had turned scarlet. The track leads round the left side of the top of the hill to the Cheese Well. This is a spring about ten metres right of the track and is marked by two stones. Both are inscribed 'Cheese Well' and one bears the date 1965. The spring gets its name from the tradition, observed by travellers, of leaving an offering of cheese or other food to placate the ‘wee folk’ who guarded the place. We carried on past the well to find a sheltered place for lunch.

In the afternoon, we retraced our steps and, leaving the Southern Upland Way, followed a line of fence posts which led up to the summit of the Minch Moor (567 m). From here we had a panoramic view and were able to see the Eildons. Several Black Grouse rose from the heather and a Kestrel was seen hovering near-by. Stag’s-horn Clubmoss (*Lycopodium clavatum*) was growing at the side of the path. Down through the heather on the other side of the hill, we came to an area drained and planted with young Sitka Spruce, but a transverse path had been left leading across the hillside. Glaucous Sedge (*Carex flacca*) and Wavy Hair-grass (*Deschampsia flexuosa*) were beside the path. Eventually we came to an opening where we re-entered the mature forest. Immediately we came upon more fungi, white *Callybia maculata*, many Mycenae and the orange milk-cap (*Lactarius deterrimus*). The path wound down the hill through the Larch and Spruce trees and joined the track on which we had set out. Two Crossbills were seen.

At the very end of the walk, the field on our right yielded a huge number of Field Mushrooms (*Agaricus campestris*), so many people were able to fill carrier bags and go home with fresh mushrooms for supper.

J. Lyburn

Alva Glen, Clackmannanshire (Fungus Foray) -- 8 October 1989

A joint outing with the Botanical Society of Edinburgh had been arranged to take place near Alva. Unfortunately there had been a hitch in communications and 11 members of the ENHS waited in vain about a mile away from where the leaders and other forayers had gathered. After attempts to find the main group had failed, our group decided to foray on its own up Alva Glen, always hoping to meet up with our leaders. It was a glorious day but a recent colder spell and some night frosts had spoilt the chances of finding many fungi.

Finds being few and far between, the group broke up after the lunch stop. Some returned direct to the car park and went elsewhere to foray but met with no greater success. Others came back by a much higher path where walking was difficult and hardly matched the code on the programme! However, the views were outstanding and were sufficient reward for the effort.

We would like to apologise to our leaders from the Royal Botanic Garden for our unintentional absence.

E. Farquharson

Boghall Farm, Bush Estate, Penicuik -- 21 October 1989

The Society visited Boghall in July 1984 and heard of the proposals put forward by the Nature Conservancy Council for improving conservation on the farm.

Thirteen members met at Boghall today and Jim Garry, conservation officer at Boghall, showed what progress had been made over the past five years.

In the morning the farm trail to the east of the A702 was followed. Aspects of hedge and ditch management were illustrated with the aim of improving their status as wild-life corridors. Ash and Oak trees had been planted in gaps in a mainly beech hedge. It was proposed to add copses of blackthorn to a small area of woodland to increase the habitat diversity. Small areas of bank erosion alongside Boghall burn were faced with woven woodwork barriers which contained willow branches. It was hoped that these might take root and become living barriers. Layering of old, open and leggy hedges had met with varying success and it was felt that the growth was too old for successful layering.

In an adjacent field a ten-metre-wide perimeter strip had been left untreated by weedkillers or other crop sprays. Already a noticeable increase in partridge numbers has been seen.

After lunch the Boghall farm pond was seen to have been cleaned out and overshadowing trees removed. Willows and smaller waterside plants have been planted and a gabion built to protect the pond from floods. Partly owing to domestic geese the water is nutrient-rich and this causes periodic algal bloom development throughout the summer. This in turn removes oxygen from the water and consequently no aquatic plants have as yet established.

The woodland in the lower Boghall glen has been thinned to encourage more ground cover of such plants as Primrose (*Primula vulgaris*), Bluebell (*Hyacinthoides non-scripta*), Sanicle (*Sanicula europaea*) and Wood Avens (*Geum urbanum*). Towards the head of Boghall glen the duckpond has been cleared and fenced off. Near the skyline at Windy Door Nick the patch of Juniper has also been given fence protection but has not as yet begun to colonise the adjacent heather.

During our walk two areas of arable land were seen which had been taken out of crop production. One area had been 'set aside' under a scheme whereby farm land is not used for food production for a few years. A number of different management methods were being compared, with the aim of preventing such areas from becoming reservoirs of weed seeds, pests or crop disease. In another area, fertile arable land has been planted with trees and different soil-cultivation and weed-control techniques are being examined.

D. Gill

Musselburgh Lagoons and Aberlady -- 11 November 1989

Once again this outing provided a 'wealth' of bird activity with nine species of duck alone - Red-breasted Merganser, Eider, Velvet Scoter, Long-tailed Duck, Goldeneye, Mallard, Teal, Wigeon, Shelduck - and excellent views of wader flocks in flight.

A very good outing for seeing a large number of species (one member claimed 43) at remarkably close quarters.

Highlights of the day were 15 Snow Buntings observed on grass near the sea wall and periodically in flight, exceptionally close views of Red-throated Divers near to sea wall with traces of red still visible on two birds and good observation of four Brent Geese at Kilspindie.

It was unfortunate there had to be a change of meeting place at Musselburgh from the printed programme due to previous uncertainty as to whether we could gain access at Goose Green owing to building construction work. However this is unlikely to occur again.

If, as I hope, repeated again next year I suggest we keep the format exactly the same.

C. Pountain

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EDITORIAL

This year has seen a larger than usual influx of new members to the Society. We welcome these new readers and hope that the Journal contributes to their interest and enjoyment.

John Sheldon, Regional Ecologist with the Lothian Regional Council, has been a regular contributor to our pages since 1982 and this year has chosen the city green belt as his topic. We are also indebted to Peter Maitland and Alex Lyle for an interesting paper on the conservation of fish species in our fresh waters. Thanks are also due to all Society members who have contributed various items and records.

The Journal Committee has seen a change this year. Our thanks go to Helen Jackson who is standing down after acting as our botanical referee for many years. We are pleased to see Jackie Muscott taking over this role.

The Journal presents an opportunity to thank members for their help in running the Society. At the AGM this year, the Society reluctantly accepted the resignation of Mrs. C. Stewart from the position of Secretary. Over the last 14 years, Connie has put considerable time and effort into her role of Secretary and this was appreciated by all members. Mrs. E. Gillespie is welcomed as our new Secretary.

Mr. Tom Prentice

Some will remember Tom Prentice who used to enjoy the excursions and lectures so much. He had a wide range of interests which he pursued over a long and varied life. He died shortly before Christmas 1989 after an illness which lasted several months. He maintained a cheerful optimism and lively interest in his environment until the last few days. His interests were reflected in his collection of books, some of which have been added to the Society's library. He has also gifted his microscopes and slide projector.

Miss Ena Weir

Ena Weir, a member of our Society since 1958, died in hospital after a short illness at Easter 1990. She worked as a School Clinic Assistant attached to Leith Clinic where her warm personality and painstaking work earned the respect and affection of staff and pupils alike.

Formerly a regular attender both at our indoor meetings and the outings, Ena also supported for many years the holiday weekend outings and the Forth Island Bird counts. On these occasions, she was often accompanied by her good friend, the late Brenda Gordon, whom she had first met at work in the Clinic.

Ena was a good listener and a brilliant raconteur. These qualities combined with her warm, generous nature and her twin loves of art and natural history made her an ideal companion.

During the years when her sister Barbara became progressively incapacitated, Ena was more restricted but her interest in the Society never waned. Since Brenda's death, Ena's active involvement was much curtailed due to a decline in her own health. Those of us who knew her count ourselves indeed fortunate.

Miss Bickerstaff

The Edinburgh Natural History Society will never be quite the same for me now that Miss M.J.S. Bickerstaff is no longer with us. She was present on the first outing I led for the Society, nearly 30 years ago, and was so full of interest and questions that it would have been difficult to forget her. Apart from meeting on many other excursions in those days, I worked near

Summerside Place and occasionally encountered her for long conversations on lunch-time shopping trips. Despite what must have been infrequent meetings she had an extraordinary memory for details of my family, their pets and many friends in the Society who had left the area.

To me, in my late 30's when we first met, she was an elderly lady and her subsequent problem with cataracts restricted her activity for some while and made her seem even older. Once she had undergone a successful operation to restore her sight, she seemed to me to take on a completely new lease of life, being utterly rejuvenated. When we met up again in 1989, she appeared to have maintained her vigour so well that I thought and hoped she must be indestructible.

It was not to be so; and I'm sure her absence will be regretted by many members past and present. D.J.

Mrs Nancy Fisher

Nancy Fisher died in January 1991 on her 80th birthday. She had been a member of the Society since 1972, and had served on the Council and as Secretary of the Sime and Gunn Bequests. In earlier years, she regularly attended field meetings and enjoyed all the countryside had to offer, even to climbing Stac Pollaidh "in borrowed time".

Nancy endured painful illness with great spirit during the last two years, but still attended lectures and bird-watched from her friend's car.

WINTER INDOOR MEETINGS 1990

JANUARY: The speaker for the first meeting of 1990 was Mr. Tony Miller, a taxonomist at the Royal Botanic Garden, and a botanist with a special knowledge of plant life in the Middle East.

Soccotra, the Island of Bliss, is part of the African continental shelf lying in the Indian Ocean at the mouth of the Gulf of Aden. The island is 135 km long and 35 km wide. At its centre are a series of granite peaks and the rest is limestone escarpment. Vegetation types match the different soils. There was an early association with Edinburgh when Sir John Balfour made an amazing collection of plants, many of them endemic to this island. Mr. Miller visited the island in January 1989 and was the first botanist to do so since Balfour's time.

Plant life close to the shore is blown almost flat by the strong winds which blow for six months of the year. Inland, the indigenous population, who have their own spoken language which is not written down, grow date palms, onions and tomatoes. They also fish, a cash crop which goes to the markets of Aden, but the staple diet is of goat-meat.

On a visit to the escarpment a few animals were seen, a chameleon, snakes, sparrows and eagles. Fossil records of crocodiles and turtles exist but the creatures are long extinct. The lower slopes of the scarp were covered with a woody, succulent scrub but above this was the frankincense tree, once an export from the island, and myrrh with its large green berries and a wood which catches fire readily. Higher up were found *Campanula balfouria* and *Protocuniacea*, a relative of the pomegranate, which may be of importance in the breeding of new varieties. There were also Kalanchoe and Persian violet whose seeds were in Balfour's original collection and which were important to the pot plant industry of the Netherlands.

The granite pinnacles often had cloud cover and therefore moisture. Here was found *Dracena cinnebari* which is specific to this area. It produces dragons blood resin used as a source of colouring matter and much prized since antiquity. The *Begonia soccotrana* found here is one of the parents of our winter-flowering begonias and is still used in breeding experiments.

The United Nations is about to pour development funds into the island. Over 80 species of plants endemic to the area could be at risk if introduced mammals arrive and roads are built which could endanger the wild pomegranate. Mr. Miller hopes to help establish sound measures of conservation before it is too late.

FEBRUARY: Mr. Duncan Gill introduced Dr. Noel Pritchard, a former curator of the University Botanic Garden at Aberdeen, now retired and an enthusiastic gardener. The speaker's title for his lecture was 'Birds, Bees and Flowers' and he was interested in the variety of flowers and the reasons for that variety.

Evolution was the key to understanding. The most significant factor was how plants reproduce, in particular how ways of pollination have changed. Modern diversity — a quarter of a million species of plants and unknown millions of insects in the world — results from changes which began 200 million years ago. The first true seed-bearing plants, the gymnosperms, forerunners of modern conifers, were already present, and so were dinosaurs. Conifers are wind-pollinated and the seeds are 'naked', that is the pollen can get straight to the female cells through a 'gap' in the tissue surrounding them. Fertilisation depends on the vagaries of the wind. Around this time the gap in the enclosing tissue closed and the first 'non-naked' seed plant or angiosperm appeared. This change allowed the plant more control over fertilisation, and laid the ground for future evolutionary expansion. By chance insects also changed at this time. Higher order insects began to multiply and assume variety. A kind of alliance grew up between plants and insects, and they began to evolve together.

The earliest insect pollinators were probably beetles trampling about on magnolia-like flowers, probably eating them, but also cross-pollinating. A modern parallel is the Yucca, some varieties of which can only be pollinated by a single type of moth, which also lays its eggs around the seeds. The moth cross-pollinates and the Yucca sacrifices some of its seeds to the larvae.

Other plants use nectar as a bribe. Marsh Marigolds are pollinated by a wide variety of insects. They have big open flowers with lots of stamens and small open nectaries. The closely-related Hellebore has a similar structure, but much longer nectaries, so it is not available to fly visitors, only long-tongued of insects such as bees or butterflies are welcome.

The Buddleia is a typical butterfly plant. Butterflies have very long tongues which can reach into flowers with long, thin corolla-tubes. Butterflies are attracted by bright colours, including white and pink. They like flowers with crowded heads which are easy to sit on, and are attracted by very fragrant odours. Flies operate on a different principle. They suck and spit and like a massed head of pale, open flowers with a musty odour such as the umbellifers, elder and rowan. In some parts of the world, not just insects, but birds, bats, shrews and small climbing marsupials may act as pollinators.

MARCH: Dr. P.M. Smith is a member of Edinburgh University staff, a grass taxonomist and President of the Botanical Society of Edinburgh. He is concerned with producing a new botany of the Lothians, and gave us a brief history of plant life in the area. He commented that proper conservation and reliable predictions about the future depend on sound historical knowledge as well as up-to-date information.

The landscape around us has its foundations in geology. Three hundred million years ago, the bedrock of Old Red Sandstone was laid down. It is a sedimentary rock with traces of dead marine creatures, but we know nothing of contemporary plant life. During this (the Devonian) period, the land was below the sea, but there was a good deal of volcanic activity, land rose and fell, many layers of sediment were laid down, and lavas such as those of Arthur's Seat overlaid them from time to time.

The Lower Carboniferous Period brings us our first plant fossils. By this time, the climate was semi-tropical and swamp covered large parts of the Lothians. This was the period of 'ooze-time' with primitive fern-like plants, 'horsetails' and 'clubmosses' as well as early conifers growing in the ooze. Fossil trees from this period can be seen at the Royal Botanic Garden. Marine sediments formed and compressed the ooze, and created the coal and oil-shale deposits around Dalkeith and West Lothian. Incursions of the sea laid down limestone (the bones of corals and sea-creatures) in places such as Dunbar.

There followed a period when the land was raised and folded, when the present Firth of Forth was a fresh-water river draining a huge area to the north and west, but also draining the Lothians, now well-above sea level, from the south. Undoubtedly, flowering plants colonised the area during this period, but no fossils remain; all were obliterated during the Ice Age. The ice smoothed and ground, and then deposited material across the landscape, creating sands and gravels, carving U-shaped valleys, and leaving boulder moraines and erratics.

For two million years, the Pleistocene ice sheet came and went, beginning its most recent retreat about 15,000 years ago. Post-glacial vegetational changes can be charted because pollen was produced in quantity and can be identified and dated. In the immediate post-glacial period, the climate and vegetation were much like the treeless tundra of the arctic regions today. Gradually the climate improved and low shrubs such as dwarf willow and juniper appeared, followed by birch, pine and oak. During the Boreal period which followed the climate was warm and dry. Virtually the whole of Britain was covered by dense forest, and the Great Wood of Caledon developed.

Then the climate deteriorated causing extensive bog growth and a big explosion in ericacious plants and sedges, and it became impossible for trees to regenerate in the wetter areas. Man appeared and began to make inroads into the great forests. By the time of Mary Queen of Scots the woods around Edinburgh had largely gone, and the Lothian landscape was already one of cornfields. Since then the pace of agricultural and industrial change has increased and has had a big impact.

But there are gains as well as losses. Aliens have been introduced around Leith Docks, and Downy Brome Grass which has been found very recently may have arrived during the building of the Edinburgh by-pass. Fossil fuel and limestone deposits will continue to be developed, but who knows what will appear round the cement factory in Dunbar as a result of lime enrichment?

It is hoped to publish a new Flora of the Lothians some time about 1996.

APRIL — Members Night: Mrs. Betty Smith showed us her lovely slides of a visit to the Seychelles. These unique islands, 1,000 miles from any other land, are of granite and very old. They had been part once of a great land mass but are now the tops of ridges showing above the sea. They have a rich and varied natural history.

The second speaker of the evening was Mrs. Elizabeth Farquharson who took as her topic the 'Vandalism of the City Fathers'. She told us of the damage by fire of the badger sett on Corstorphine Hill, of the ploughing up of the crocuses which had been planted by members at Balerno as a remembrance of Miss Janet Raeburn, and of the Royal Fern at the Hermitage of Braid which had been tidied away by gardeners. Information about any whalebone arches known by members was also asked for.

A group of slides taken at Logan Gardens was the start for Mrs. Margaret Little's contribution. The flowers were very splendid. She also photographed plants round the shores of the Mull of Galloway and members on some of the current year's outings.

Mr. John Winham showed us the very interesting underwater slides taken in the waters around St. Kilda. We saw many beautiful and fascinating marine plants and creatures not normally accessible to most of us.

OCTOBER: Following the Annual General Meeting, Mrs. Vida McFarland showed slides taken on a very recent journey in China. At Beijing the great classic monuments were seen, The Forbidden City, the Temple of Heaven with its marble steps and glistening dark blue tiled roof, the Ming Tombs surrounded by forests of pine and Chinese juniper and the Great Wall which swoops for more than 2,000 miles across remote and mountainous country. Xian, a city twinned with Edinburgh, was the next visit. Photography is not permitted at the tomb of the warriors but models and paintings can be purchased and the museum is impressive. It houses the most perfect and rarest examples of the warriors. Nearby are the lovely pleasure grounds and palaces at the hot springs which were originally devised by the last of the Tang emperors for his beloved concubine. Just by the gates there is now a colourful, entertaining, free market selling peasant craftwork and along the street are the sellers of pomegranates with great baskets of rosy fruit.

The cities were left behind in a journey into Sichuan province. This is one of the richest and most beautiful agricultural areas in China almost completely surrounded by high mountains. In the western ranges lies the huge reserve where the Giant Panda still lives. Here is a countryside of magnificent forests with lovely wild flowers, birds and butterflies. The southern edge of the province is bounded by the Chang Jiang (Yangtze), the third longest river of the world and it cuts its way through the eastern mountain ranges in a series of spectacular gorges. Three days were spent sailing through the Yangtze gorges. Five days are required to make the same journey upstream. Below the gorges on the great central plain of China lies the huge manufacturing city of Wuhan where the ancient crafts of China are still carried on. It was possible to wander freely in the streets to buy fruit, sweets, slippers or embroidered jackets in the markets.

It was not only the great monuments and marvellous craftwork which delighted visitors. It was also the warmth and openness which was encountered everywhere from the stallholders in the streets, the patient orderly queues waiting to visit Mao's tomb in T'ien-an-Men Square or the country folk encountered on the farms or mountain footpaths who made one so welcome.

NOVEMBER: Dr. Paul Thompson from Aberdeen University has been studying seals and dolphins in the Moray Firth since 1987. His work has been mainly with seals but he also had an interest in dolphins and the area around the Moray Firth is an excellent place for the study of marine mammals.

Grey Seals breed along the rocky shores on the coasts of Banff and Sutherland. Common Seals are present throughout the year and there are occasional visitors of Arctic species. Grey Seals inhabit the North Atlantic waters only and about half the world's population live round the coasts of the British Isles. In autumn the mothers come ashore with their pups and remain with them on land for two to three weeks. The males do not stay on land but defend the females from the water. The pups are white coated and weigh around 10 kg at birth. They treble this weight in three to four weeks. Outside the breeding season the whereabouts of the seals is not well charted but they are known to travel great distances at sea.

Common Seals occur in the North Atlantic, along the coasts of Greenland and the United States, including the western coasts, and around the coasts of Japan. They inhabit a variety of sites both rocky and sandy. Pups are born in the summer in Scotland and in the United States from April to September. They are more advanced in development than Grey Seals, having an adult coat and being able to swim from birth. It is difficult to study the biology of the seals as they are intensely active but at the time of the moult they spend more time out of the water, so this is the time to record numbers.

The Moray Firth is a shallow water area with smaller firths branching at its inner edge. The work of the research team is to assess numbers and chart movement and it is sometimes possible to watch seals from a main road. Counts made across the year show that numbers are higher in summer and lower in winter. Animals are caught and colour marked and fitted with a radio transmitter. They are weighed, measured and then their movements are traced by radio signal. Since the sound cuts out when the seals are in the water it is possible to tell whether they are on land or sea, how long the animal spends there and where the animal moves to. Signals are automatically recorded and each seal has its own frequency. A group of research workers in Aberdeen looked at the diet of seals, faeces of which were collected and analysed. Fish ear bones (each species has different otoliths) and squid beaks were found. The bulk of the seals' diet consisted of herring, sprats and sand eels.

Seal disease started at Anholt in Denmark and moved down the coast of Europe, appearing in the summer on the coast of Britain. The peak was in August and September 1988. The distemper virus was serious in Europe but there were fewer casualties in the Firths. By 1989 there was a decrease in the numbers dying. Blood samples were screened and antibodies found to be present. Moray Firth seals seemed to be more resistant. The question now being studied was whether animals may find it more difficult to survive in polluted waters.

There are only one or two resident populations of dolphins. The group have tried to monitor their population status and to see whether human activity affected them. They have been observed from 15 different sites. One watch was done simultaneously to ascertain that different schools were being observed. Dolphins have unique markings and watchers record on photographs what the dolphins are doing, e.g. fishing or playing. It is possible to note the group structure, estimate population, check their state of health and determine the nature of their diet and cause of death.

DECEMBER: Dr. Jane Williams who works in the Education section at Edinburgh Zoo has a particular interest in chimpanzees. She found many interesting connections between them and the human visitors to the zoo. The animals in the colony are very noisy and try to score points off one another.

There are six subspecies of chimpanzees arising from isolation in differing areas of the African rainforest. They are distinguished by their different facial markings. There are both arboreal and ground living species. They are mainly plant eaters consuming leaves, bark roots and fruit (but not bananas which they find indigestible). Sometimes they eat meat and in this venture they display co-operative behaviour. They share meat but not plant foods. Food is used to bestow favours.

The nucleus of a group consists of the females and their babes. The female selects her mate and she chooses whom she sees as being most successful or attractive, passing on to her offspring the characteristics she likes. There may be 60 to 70 members to a troop and the females may transfer between groups. The males form a strict hierarchy and use all sorts of wiles to increase status, but do not fight to the death. Males move up and down the hierarchy. One chimp at the zoo fell and broke a limb and it was expected that the next below him who had been jostling for position would take his place. In fact there was a truce till the first had recovered. Chimps may have a number of mates but only exert themselves in favour of their own offspring. As members of a group they will stand together in the face of danger, forgetting their own quarrels.

In communication the body language of chimps is quite clear and facial expression is quite marked. They show their teeth in anger and our human smiles (exposing the teeth) and body posture (upright) are interpreted by them as threatening. Body posture draws the distinction between fear and anger. They use hand gesture and may offer a hand to touch. They kiss in reassurance. Their signals can be quite subtle.

The enclosure at the zoo is designed to mimic their natural surroundings and the chimps are mixed to permit natural behaviour. They can climb and swing, poke and search for buried food and they are observed to copy and learn from one another. Lucy, the more intelligent one in the zoo group, once managed to open the enclosure and led the others out. They returned at dinner time. However the animals may be dangerous because of misreading our body language and they are very strong. The wall of their new enclosure is 20 ft high and all the objects in it are kept low as the chimps can behave like engineers and will co-operate to get out.

Dr. Williams had many interesting anecdotes about the chimpanzees at the zoo, illustrating their many similarities to humans even to enjoying sunbathing in the summer and throwing snowballs in winter.

V. McFarland

THE GUNN PHOTOGRAPHIC COMPETITION 1990

This year the competition attracted 26 entries submitted by ten photographers. Once again we have four separate sections for flora, fauna, landscape and humour, and entries were equally split between these categories. For a third consecutive year we are indebted to Mr. Sidney Clarke for judging the competition.

Winning entries were:

Flora:	E. Farquharson	*'Fomes Fomentarius'*
Fauna:	R.W.J. Smith	*'Gannets on Bass'*
Landscape:	J. Campbell	*'Sunset – Lochalsh'*
Humour:	J. Campbell	'Caber Tossing? It's easy'

These photographs are reproduced on pages 9 and 11.

WILDLIFE IN THE GREEN BELT?

Few cities can match the unique setting of Edinburgh. Bounded by the Forth Estuary to the north, the flat countryside around the capital is only interrupted by the Pentland Hills, which break through the coastal plain. From whatever approach, the landscape setting of Edinburgh, with its famous profile extending from the Castle, eastwards to Arthur's Seat, can hardly fail to impress.

Perhaps this is rather a romantic image that we all have of the city but the fact that we have it at all is due, to some degree, to the 1956 designation of the countryside around the capital as Green Belt. The countryside around any town or city is always under pressure from developers and this is why the Green Belt was established as a planning control. The countryside around the city is often the playground of those that live on the urban edge but it is also a working countryside, largely maintained by farmers who make a living alongside and despite of these pressures. The Green Belt has helped to control the growth of the city but it contains many environmental problems which remain to be resolved. When looked at more closely some of the romance is lost.

The countryside around Edinburgh possesses a local character largely created by the landed estates of the 18th and 19th centuries. It is a planned landscape of pleasure grounds and shelter belts around some of the great mansion houses of Lothian. Some of these houses, such as Mavisbank and Edmonstone, have been abandoned and are in a ruinous state, while the associated man-made landscapes of them all are in various states of management or neglect.

Beyond the parklands the highly productive soils of the coastal plain are intensively farmed, primarily for arable crops, there being only two dairy farms in the whole of the Green Belt. This intensively farmed land is typically devoid of hedges and trees. Yet, if you think about it, the

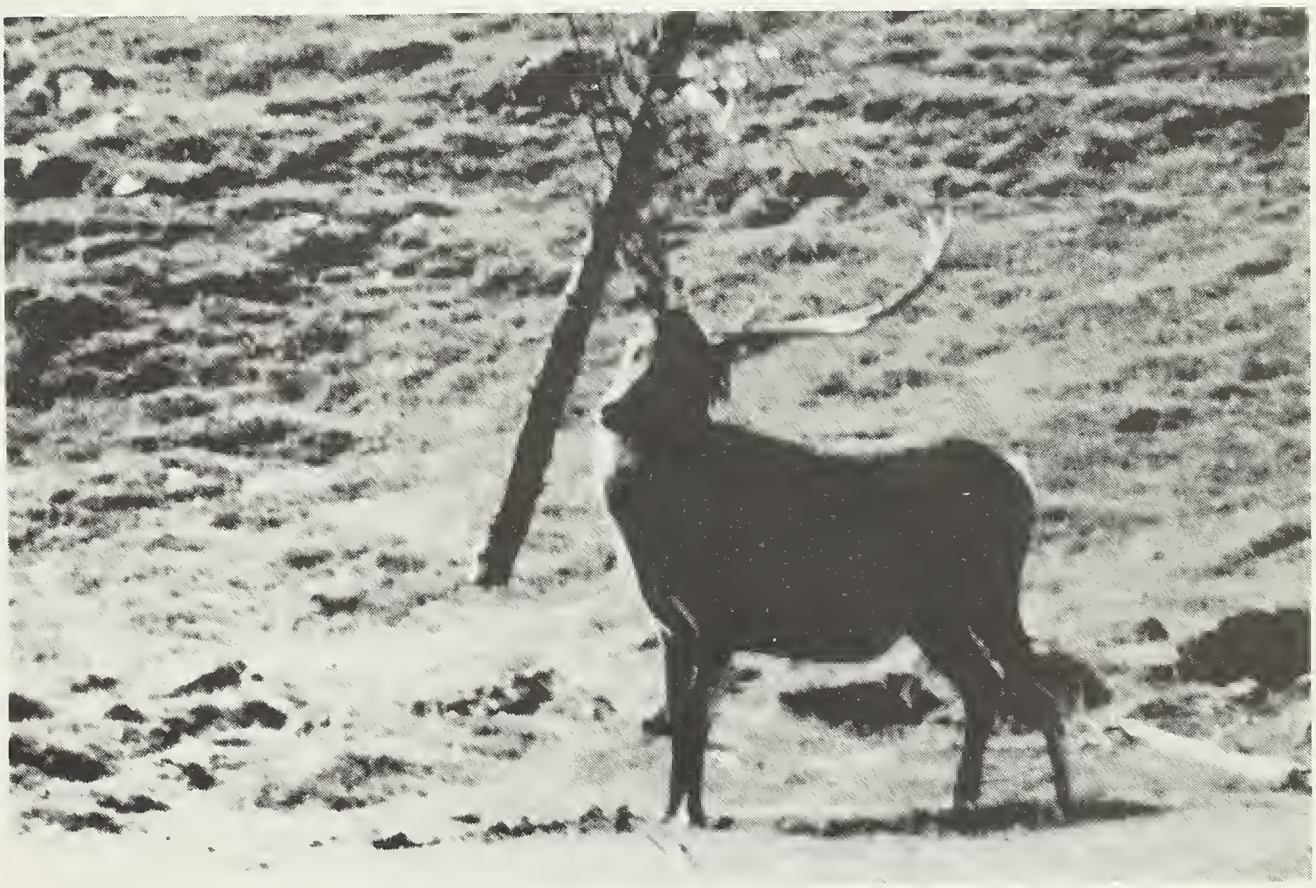
GUNN PHOTOGRAPHIC COMPETITION - 1990

FLORA : *Fomes fomentarius* *by E.Farquharson*

FAUNA : *Gannets on Bass* *by R.Smith*

GUNN PHOTOGRAPHIC COMPETITION - 1990

LANDSCAPE : *Sunset - Lochalsh* *by J.Campbell*



HUMOUR : *Caber Tossing ? Its' easy !* *by J.Campbell*

uninterrupted, sweeping expanse of this agricultural plain emphasises the drama of the city landscape.

Power lines feed into the city and, unusually for such farmland, coal waste tips sit prominently amongst the fields of barley. The coal industry is no longer active but the marks of this industry still remain. Further, both on the edge of Edinburgh and around the communities within the Green Belt, the pressures on the agricultural land can be intolerable. It hardly encourages any landowner to plant new trees or woodlands let alone manage the existing ones. Fly tipping and vandalism all too frequently reflect the urban influence on this countryside.

In all this can be identified the constraints and opportunities that must exist in the Green Belt for management and enhancement of this important piece of countryside. It cannot be fossilised since trees grow old. The danger of its abuse is that it can make its development an attractive option if it means an improvement on what society is subjecting it to now.

While strong planning control is perhaps what we mainly associate with Green Belts, there is little point operating such controls if the environment is allowed to decay and disintegrate. For this reason, in 1988 the 'Edinburgh Green Belt Initiative' was established by the Regional Council, the three District Councils of Edinburgh, Midlothian and East Lothian, and the Countryside Commission for Scotland. This year (1991) the Initiative is to be replaced by a charitable Trust to continue and develop the environmental programme that has been set. Most importantly, the Trust is to be a partnership of the private, public and voluntary sectors, since the task in hand cannot be tackled by any one sector in isolation.

An important element of this Initiative is wildlife conservation. Perhaps the image that we have of the Green Belt has little space in it for wildlife. Certainly over the centuries the quantity and quality of its wildlife has been reduced to a fragment of its true potential. Only in those areas which to a degree have escaped the pressures of farming and development, the hills and the river valleys, do we find areas of significant wildlife interest.

During 1990, to learn more of the wildlife of the Green Belt, the Scottish Wildlife Trust was commissioned to carry out a wildlife survey of the area and to draw up a nature conservation strategy. This gathered a lot of information, not only bringing together the listed wildlife sites but also identifying others of importance. It also went much further in its identification of the essential management requirements of habitats and named sites to guide the Trust on the priorities and opportunities for wildlife conservation in the Green Belt.

Too often the survey identified the poor quality of woodlands for wildlife — being typically dominated by sycamore and poorly managed, impoverished hedgerows, infilled ponds, polluted burns, and invasive exotics such as Giant Hogweed.

From this we must ensure that sites of importance are protected and careful management is promoted in partnership with the owners. What is more apparent, however, is the need to improve and create habitats. While it is the landscape which is important to Edinburgh, the quality and value of this for wildlife must be integral to the challenge of management and creation which the Trust inherits from the Green Belt Initiative. At the same time, no opportunity must be missed which might have educational potential. The richness and contribution that a landscape makes is as much related to what place has been created for wildlife as to its social and amenity function.

If the Green Belt is to become a living countryside for wildlife, then it will be a far richer countryside than exists at present. The task will not be easy but no opportunity must be wasted and all the skills of nature conservation will have to be applied. Wild primroses will not re-introduce themselves because a fence has been erected around a woodland, redstarts will not take up territory unless the new woodland has been designed with their requirements in mind, and butterflies will not be much interested in the reclaimed derelict land unless the right food plants have been established.

It is hoped that a nature conservation strategy for the Green Belt will take all these matters in hand. The 'Green' of the Green Belt should really mean something.

Dr. J.C. Sheldon
Regional Ecologist
Lothian Region

AIDS TO IDENTIFICATION

For the botanist and the bird-watcher the shelves of the bookshops are stacked with a bewildering variety of tempting titles. But where does one go to get information on ladybirds or grasshoppers or bumblebees? How does one set about trying to identify those water beetles that the young, or not so young, pond-dipping enthusiast finds clambering out of the vegetation in his/her net? At last there are two really good, reliable and not wickedly expensive sets of identification booklets which between them cover many groups of organisms for which previously there were no readily available or easily understood keys.

The *Naturalists' Handbooks* is a series published by the Richmond Publishing Co Ltd, PO Box 963, Slough SL2 3RS. Each book in this series deals with either one taxonomic group of organisms, e.g. ladybirds, or a habitat group, e.g. animals on seaweed. Not only are there excellent illustrated identification keys but also much information on the natural history of the group in question is provided as well as practical suggestions for research. The series is produced by experts but is designed to fulfil the needs of school-children, university students, amateur and professional naturalists alike. Each book is a masterpiece and no naturalist could fail to find one or more of the series of absorbing interest.

The other series of very useful identification keys is the *Aidgap Publications*. Aidgap stands for Aids to Identification in Difficult Groups of Animals and Plants. Such topics as *A Field Guide to the Slugs of the British Isles* and *A Field Guide to the British Red Seaweeds* provide much needed assistance in accurate identification. No recording is worthwhile unless identification is certain. These guides have been well tested during their production and are invaluable to the naturalist studying any of the 'difficult' groups of organisms. The Aidgap keys are published by the Field Studies Council and may be purchased at any Field Studies Council Centre or ordered through the post from 'Field Studies', Field Studies Council, Preston Montford, Montford Bridge, Shrewsbury SY4 1HW; or from The Richmond Publishing Co Ltd.

E.M. Smith

A DIFFICULT PLACE TO LIVE

Many people, if asked to name the harshest environment on the earth would probably reply 'Antarctica' — or 'the desert' — or even 'rocky mountain tops'. My reply would have to be 'the seashore' and this article is a review of some of the many factors that plants and animals have to contend with. When you know something about the tremendous variety of conditions that can exist in this environment, it seems surprising that *anything* can survive long enough to carry out the necessary functions of feeding and growth and to successfully produce young to maintain the succession of generations.

To support my statement, think of the tremendous variety of seashores that you know in Britain: muddy shores, sandy shores, rocky shores and, not infrequently, a mix of two or more types. Add to this the variety within these three types; for example, within any stretch of rocky shore there is often a variety of types of rock: hard rock, soft rock, porous rock, impermeable rock and often with some variation in the 'dip and strike', the way in which the rock strata are arranged.

Think also of the day-to-day variation in the amount of shelter from wave action, within or among these rocks, both as a result of weather and geography — for example, whether they are situated on promontories or in bays, whether facing into the prevailing wind or away from it. Waves on the eastern coast of Britain are never as strong as those on the western coasts where the 'fetch' (the distance that waves can travel in a direct line) can be 3,000 miles. In the Firth of Forth, it will usually only be a few miles.

These two factors can be described under the headings (i) substratum — more commonly anglicised to 'substrate', and (ii) exposure to wave action. A third one is perhaps the most important and the only one totally characteristic of seashores; that is (iii) tidal rise and fall.

On the face of it, this seems to be reasonably simple. Tides rise and fall twice every day or, more accurately, approximately every 25 hours. This results in the top vertical foot of shore being covered by seawater for only an hour or so twice in the day. As you progress down the shore, less and less time is spent exposed to the air and more and more is spent submerged, until a foot or so above low tide level, the exposure to air lasts no more than an hour.

Yes, that sounds quite a simple and straightforward pattern, and plants and animals with particular requirements for being submerged or uncovered for longer or shorter periods could easily arrange themselves in parallel bands up and down the shore to suit their requirements. However, in conjunction with the regime just described, you have to note that the tides are in synchronisation with the moon, not the sun, so that the times of high and low tide vary from day to day and the range of tides vary with the lunar month of 29 plus days, being maximum shortly after the new and full moon, and minimum shortly after the first and last lunar quarters. These maxima and minima also show a cyclical pattern, with the extreme maxima occurring at the equinoxes and the extreme minima at the solstices!

There is one more problem with tides. They don't just happen all at once, at the same time at all places, but are governed by tidal currents — generated from the centre of the major oceans — and they only manifest themselves when the continental shelf and the coastal shallows are reached. The result is that a current sweeps round the coast of, for example, Great Britain, and brings a succession of high tides which passes along the coasts. High tide at Aberdeen occurs before high tide at North Berwick, which is before high tide at Newcastle-upon-Tyne, and so on.

Tidal currents have less influence on distribution of fauna and flora than the heights and depths that high and low tides reach, a factor of especial importance to the distribution, and particularly the vertical extent to which plants and animals occur on the shore. Generally, the tidal range varies according to the effect of coastal structure — inlets, bays and so on. For example, where water fills a narrow bay or sea loch, the tide is piled up and reaches a greater height at the inner end while at the open end the range is much less. The area of the oceans is the initial factor in governing tidal heights, the effects of shore conformation being superimposed on this. For example, daily tidal height at Leith may be 16-17 feet. In the extensive and narrow Bay of Fundy, North America, it is more than 60 feet, while in the Mediterranean, the tidal range is measured only in inches, because, by comparison with the Atlantic, it is a small area of water.

The visible fauna and flora of the seashores can be divided into two types, the mobile and the immobile. The strategies of these organisms have developed to allow them to withstand not only the difficulties already mentioned, but other related problems. For example, a sedentary animal must remain forever in the spot which it selected as a juvenile, probably when it was developing from a free-swimming larva into the young adult form. It therefore has to withstand whatever conditions it receives, in its chosen spot, and these may include being baked in hot sunshine during the time the tide has left it, e.g. over the mid-day period in high summer, or suffer severe freezing conditions in the winter. If calm conditions occur during periods of extreme neap tides, the same animal may be left for long periods in dry conditions because the tide does not reach it and, with no wind to produce waves to 'wash' up the shore, nothing but a shower of rain can keep it moist and cool. However, there is the associated problem here, that of salinity.

Heavy rain may moisten those organisms stranded above the tide line, but because of the salinity of their tissues, the moisture provided by the non-saline rainwater could be as damaging as no moisture.

Mobile animals, such as the Dog Whelk (*Nucella lapillus*), have the advantage over sedentary animals, such as Acorn Barnacles (e.g. *Balanus balanoides*), and can migrate down the shore, seek shelter, and even change their diet if it becomes necessary, feeding on inhabitants of the mid to lower shore. The barnacles, on the other hand, merely have to possess an ability or feature by which they are able to withstand conditions in their fixed position — or die *in situ*. Plants such as the large algae are not mobile, but they either restrict their presence to sites on shore where they are guaranteed to be kept moist, or they are capable of withstanding unfavourable conditions, e.g. by the presence of a thick coating of mucus which enables them to withstand drying out without damaging the cell-structure, and they have the ability to absorb moisture rapidly when conditions improve.

Seaweeds are even more vulnerable than Acorn Barnacles to conditions such as torrential rain, when they are at risk of losing cell contents by osmosis and therefore need strategies to overcome this. A similar situation arises beside outflows (rivers, burns and seepage) where freshwater may be pushed or spread over the shore by the denser salt water. Such low salinity water may alternate with high salinity open-sea water depending upon the strength of such flows and the strength of the tidal waters.

River water often carries in suspension silty material washed from the banks and fields upstream. The interaction of salt and freshwater causes the silt to drop out of suspension and this may be a problem to plants and animals on the shore as it spreads a film of mud over the rocks and covers the resident plants and animals, interfering with their bodily functions and even smothering them.

On rocky shores with an adjacent sandy beach, a similar problem arises because heavy wave action can carry sand over the rocks, burying sedentary animals and plants. Alternatively, it may be powerful enough to scour them off the rocks.

I could write for much longer about such problems and the various strategies adopted by the organisms to overcome them, but space does not permit. All I can say is that you should be thankful that you are a land animal[1] and, by comparison, life is relatively simple. Most of *our* ecological problems are of our own making — and hopefully will be of our own solving.

D.H. Jones

[1] It may interest you to know that a very worthy scientist for whom I have a great respect, produced a reasonably tenable theory that, at a relatively recent stage in man's evolution, he lived by, and in, the shallow seas, feeding on shellfish and other seafoods. Since writing this a few days ago, I have learnt that a new book by Welsh scientists, Elaine Morgan, has renewed and expanded this theory and a growing number of international scientists are also reconsidering it. Come the warming up of the globe and the penetration of the atmosphere by more ultra-violet rays, we might even have to revert to this method of living ourselves!

CONSERVATION OF SPARLING AND OTHER FISH IN SCOTLAND

In Scotland and many other countries the conservation of fish has been sadly neglected and several species have undergone severe declines. At least one species (the vendace, *Coregonus albula*) has become extinct in Scotland in recent years and individual populations of several other fish have disappeared. Currently, the authors are investigating the status of all freshwater fish in Great Britain and developing management plans for the conservation of rarer species (Maitland & Lyle, 1987, 1991).

The sparling, *Osmerus eperlanus*, or smelt as it is commonly called in England, is a small- to medium-sized fish whose adult size can vary greatly according to habitat. The normal range in length is 10-20 cm but the fish can sometimes reach 30 cm. A small, rather slender fish with large scales and eyes, a projecting lower jaw and obvious teeth on both jaws, the live fish are somewhat translucent in appearance and have a very characteristic cucumber-like smell. In colour, the top of the head and the back are a dark grey-green which shades into a silvery green stripe along each side and silvery white below.

The sparling occurs in coastal waters and on reaching maturity, adults migrate up the estuaries and into the lower reaches of rivers in March and April. Usually the run in each river occupies only a few days, but during that time the spawning activity becomes furious and the sticky eggs attach themselves to everything on the river bed — gravel, stones, weed and sticks. Sometimes the river level drops subsequently and leaves many eggs stranded to dry out. The adults are very vulnerable to all kinds of predators (including humans) at this time and occasionally become so excited during the actual spawning that they swim out of the water and strand themselves on dry land.

The species is tolerant of wide salinity changes and there are several non-migratory purely freshwater populations in large freshwater lakes in Finland, Sweden and Norway. The sole freshwater population in Great Britain, in Rostherne Mere in Cheshire, became extinct in the 1920s, probably as a result of eutrophication. This fish is apparently very susceptible to pollution and perhaps other stresses created by humans. Many estuaries which formerly had large populations lost them as pollution increased and the species is now much less common.

The sparling was formerly found in the estuary of the River Forth and many other rivers in Scotland. It was particularly abundant in the River Forth near Alloa where it was taken in great numbers by fishermen. In spring, enormous numbers ascended the river in shoals to spawn about 3 km below Stirling Bridge when “every stone, plank, and post appears to be covered with their yellowish-coloured ova” (Parnell, 1838). The sparling was much esteemed as a luxury for the table and “numbers are sent to the Edinburgh market where they receive a ready sale”. They have declined enormously during this century and the species disappeared form the Forth during the 1960s. None were recorded at all during the 1970s (Maitland *et al.*, 1980) but in 1989 a single specimen was recorded from the estuary (Forth River Purification Board, 1989) and in 1990 three further specimens were taken.

Populations of sparling are found now in only two estuaries in Scotland — those of the Rivers Tay and Cree. The Tay population is fished within the estuary by boom nets and that in the Cree by net and coble in the uppermost reaches of the estuary where up to five tonnes have been taken in some years; there is little doubt that the fishery is a threat to the stock there. The disappearance of sparling in several other rivers (Nith, Anna, Stinchar) may well have been due to over-fishing.

The species has been studied in the River Cree by Hutchinson & Mills (1987) and more recently by the authors who obtained fertile eggs there in 1984 and hatched them out in the laboratory. It is hoped that the few fish found recently in the Forth estuary may be the progenitors of a new population there. However, if they prove to be casual vagrants, like the single fish caught a few years ago in the Clyde estuary (Anne Henderson, personal communication), a special introduction project may be necessary to initiate a new population. Introductions to other estuaries are also under consideration.

As well as the sparling, the Arctic charr (*Salvelinus alpinus*) is under threat in some parts of Scotland, especially the south, and is the subject of a conservation study by the authors. This species has disappeared from several lochs in southern Scotland due mainly to acidification and remains in only one water, Loch Doon, which is itself undergoing acidification, as a recent study there has shown (Maitland *et al.*, 1991).

In order to save this last remaining southern stock, the authors are attempting to establish two new populations from it in Talla and Megget Reservoirs in Borders Region. Adult charr from Loch Doon were transferred to Talla Reservoir in 1987, 1988 and 1989. Also, for the last five years, fertile eggs have been collected from Loch Doon in October by stripping female and male charr netted on their spawning grounds in shallow water. These eggs are incubated in hatcheries and after hatching the young fish are introduced to Megget Reservoir the following January.

The results from Talla Reservoir have already shown some promise and two young charr, which could only have come from adults spawning there in the autumn of 1988, were collected from the outflow in early 1990. No results are yet available from Megget Reservoir.

Action is being taken for other rare fish in Scotland. The powan (*Coregonus lavaretus*) is found only in Lochs Lomond and Eck. A similar exercise to that described for charr is being undertaken for the Lomond powan with introductions being made to Sloy and Carron Reservoirs. Also, the allis shad (*Alosa alosa*) and the twaite shad (*Alosa fallax*), both coastal fish which spawn in fresh water, are being investigated. No spawning populations of either of these shad are known in Scotland but mature specimens appear each year in the Solway Estuary where specimens caught by local salmon netsmen are being studied in detail.

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SOME RARE PLANTS FOUND ON EXCURSIONS 1990

Pepper Wood, Kirkliston, West Lothian, contains many unusual plants and is an SSSI for this reason, the May Lily (*Mianthemum bifolium*) being unique. It was in bud on 5 May. On our outing to Birkhill Clay Mine, West Lothian (NT 968789) members were delighted to find Adder's Tongue fern (*Ophioglossum vulgatum*); in fact some members found themselves sitting on it. At Scurdie Ness, near Montrose (NO 735568), the Duke of Argyle's Tea-tree (*Lycium barbarum*) was seen. This turned up later in a similar habitat on the Dunbar Castle walk. The delightful Spring Sandwort (*Minuartia verna*) was in flower when we visited St. Abb's Cliffs in early June.

Longmuir Moss, Oxton (NT 496535), is the only location for *Carex diandra* known in the old counties of Berwickshire and Midlothian, whose boundary runs through the Moss. Here I quote the County Recorder, Michael Braithwaite, who pointed it out for us. Tea-leaved Willow (*Salix phylicifolia*) and Marsh Ragwort (*Senecio aquatalis*) were also seen.

I believe there was some excitement when Basil-thyme (*Acinos arrensis*) was seen at Yellowcraig, North Berwick, as it is not listed in the Flora of East Lothian 1988. In West Lothian, Craigton Quarry (NT 074769) is very rich botanically. Here members found a single plant of the Dark Mullein (*Verbascum nigra*) with its orange pistils and purple stamens. Growing in the same area was Musk Mallow (*Malva moschata*), both pink and white-flowered plants being noted. Among the garden escapes from Craigton House which dates from the late 17th century, members found Blue Sow thistle (*Cicerbita macrophylla*), Saracen's Woundwort (*Senecio fluviatilis*), Jacob's Ladder (*Polemonium caeruleum*) and Stinking Iris (*Iris foetidissima*).

Betony (*Betonica officinalis*) was flowering in early August at Lilliardsedge, Ancrum Moor (NT 613278), on our Dere Street walk. This must be its northern limit, being a very rare plant in Scotland.

Bugloss (*Anchusa arvensis*) was discovered at the edge of a barley field near the Kinmonth Deer Park, Moncrieffe Hill, Perthshire (NO 155194), and turned up again on the Dunbar Castle walk, near West Barns (NT 659785). Scarlet Pimpernel (*Anagallis arvensis*), Red or Sand Spurrey (*Spergularia rubra*) and Smooth Tare (*Vicia tetrasperma*) added to the Moncreiffe Hill list.

Garden escapes at Dunbar included Caper Spurge (*Euphorbia lathyrus*), sometimes called the Mole Plant, Everlasting Pea (*Lathyrus sylvestris*) and Red Valerian (*Centranthus ruber*). Further west, along the coast towards West Barns, we found Foxtail Barley (*Hordeum jubatum*) and Strawberry Clover (*Trifolium fragiferum*) growing near each other on a gravelly area near Seafield Pond. Crow Garlic (*Allium vineale*) was found along the path from West Barns towards the Biel Water. This walk took us as far as the conifer plantation at the east end of John Muir Country Park. In a clearing beside it, one sharp-eyed member found a single specimen of the Lesser Clubmoss (*Selaginella selagnioides*) and then identified Bog Pimpernel (*Anagallis tenella*) from its seedheads. From the records it looks as if both these plants have spread eastwards from Yellowcraig.

The visit to Hopes Reservoir in September produced Musk (*Mimulus moschatus*) in a marshy stream below the reservoir and Staghorn Clubmoss (*Lycopodium clavatum*) on the slope to the right of the dam.

M. Robertson

FLINT

Any flint found in south-east Scotland has probably come from the south of England during the Stone Age, some 5,000 years ago when flint was used for tools and weapons. More recently, flint was imported for use in making glaze in pottery works at Port Seton and Musselburgh.

Some Society members who attended the Norfolk week in May visited Grime's Graves which was one of the largest quarries used by Stone Age man. Hundreds of shafts had been dug down into the chalk enabling top quality flint to be extracted from a layer some 40 feet below the surface. Elsewhere we saw how flint was widely used by East Anglian builders on the outside walls of houses and churches. Speculation arose as to how the strange-shaped nodules of flint were formed in nature.

It was known that most British flints occur as irregularly-shaped nodules in the chalk deposits of south-east England. Moreover, they occur in clear bands or layers within the chalk, as is well seen in the cliffs at Dover.

Numerous theories have been put forward to explain the occurrence of flints, none of which appear to fit all circumstances.

Flint is a black variety of chert. Chert and chalcedony are similar types of rock which differ only in their degree of lustre. Chert is the duller type whereas chalcedony is brighter and more lustrous, and includes gems such as agate and onyx. All these rocks are described as cryptocrystalline quartz which means a quartz in which crystals are so small as to be only seen by microscope.

Flint forms from silica that has been removed from silicate minerals by chemical action. The silica forms a colloidal suspension of very fine particles which settle out as a non-crystalline gel. Gradual loss of water eventually leads to the formation of the microscopic-sized crystals of flint.

As British flints occur mainly in chalk it is generally agreed that sea animal life — mainly sponges — is the original source of the silicate mineral from which flint derives.

One theory is that as the gel settled out in the sea it accumulated as gelatinous lumps on the ocean floor and eventually produced the flint nodules as discrete bodies within the chalk. A modification of this theory is that dead marine animals such as sea urchins could form the foci for nodule formation. To explain the banding of nodules within the chalk it was suggested that there must have been particularly good sponge populations built up every 600 years or so.

Another theory is that the silica gel was deposited fairly uniformly within the chalk deposition. As this ooze on the sea floor compacted, so water was expelled and the silica suspension shrank in volume and coalesced into separate units which eventually formed flint nodules.

A third theory of flint formation suggests that it took place after chalk was formed from deposits on the sea floor and after this chalk had been raised up above sea level by later earth movements. Surface water then leached down through the chalk dissolving and redepositing silica as flint nodules. The layering might then be explained by different times and degrees of earth uplift or by lines of weakness in the chalk.

There are many variations and refinements of these basic theories but the fact remains that the process of flint formation has still to be conclusively explained.

D. Gill

NOTES ON NATURAL HISTORY 1990

Observations

14.11.89 Royal Botanic Garden, Edinburgh: A Small Tortoiseshell butterfly feeding on *Helichrysum trilineatum.* *(C.R.)*

21.11.89 Longniddry Bents, East Lothian: As Magpies have long been scarce in East Lothian, it is worth recording that I saw two here today. *(C.R.)*

5.12.89 Bawsinch, Edinburgh: A Water Vole (*Arvicola terrestris*) in the Peffer Burn. *(C.R.)*

2. 1.90 Yellowcraigs, North Berwick, East Lothian: Great Northern Diver. *(B.C.)*

7. 1.90 Tentsmuir Forest, Leuchars, Fife: Three species of Heather in flower — *Calluna vulgaris, Erica tetralix* and *Erica cinerea.* *(D.A.,G.M.)*

15. 1.90 Bawsinch, Edinburgh: 38 Magpies near Gunn pond. *(D.G.)*

15. 1.90 Inverleith Park Pond, Edinburgh: One Black-headed Gull with a fully 'black' head. *(C.R.)*

17. 1.90 Bawsinch, Edinburgh: An early Lesser Black-backed Gull on Duddingston Loch. *(C.R.)*

28. 1.90 Duns Castle Reserve, Duns, Berwickshire: Mandarin Duck *(B.C.)*

1. 2.90 Inverleith Park Pond, Edinburgh: A drake Red-breasted Merganser. Other sightings on 8.2.90, 11.2.90, 2.3.90 and 6.3.90. *(C.R.)*

3. 2.90 Roslin, Midlothian: Kingfisher on River Esk. *(D.A.)*

18. 2.90 Linlithgow, West Lothian: Warbler, either a Willow Warbler or a Chiffchaff foraging like a Dunnock in a garden in Preston Road, Linlithgow. *(D.A.,G.M.)*

22. 2.90 The Meadows, Edinburgh: 40 Redwing feeding in the Meadows. *(E.F.)*

24. 2.90 Bruntsfield, Edinburgh: After heavy rain the paths across Bruntsfield Links and the Meadows from Bruntsfield to George Square were littered with dead worms, averaging at least one every three feet. *(E.F.)*

10. 3.90 West Barns, Dunbar, East Lothian: pair of Gadwall. *(B.C.)*

17. 3.90 Gosford Bay, Aberlady, East Lothian: Sand Martin. *(B.C.)*

23. 3.90 Bawsinch, Edinburgh: Water Rail. *(C.R.)*

24. 3.90 Aberlady Bay, East Lothian: Wheatear. *(B.C.)*

31. 3.90 Isle of Colonsay: Chiffchaff singing in woodland near Colonsay House. *(E.S.R.,M.R.)*

2. 4.90 Inverleith Park, Edinburgh: Red-breasted Merganser on Inverleith Pond. This is unusual, normally there are only Mallard, Common and Black-headed Gulls. *(C.S.)*

8. 4.90 Otterburn, Northumberland: Dead Badger by the A68 near Blakehope on Dere Street, close to the Dargues Burn (NY 861939). *(E.F.)*

21. 4.90 The Hirsel, Coldstream, Berwickshire: Hawfinch. *(B.C.)*

21. 4.90 Woodland Centre, Jedburgh: Sand Martins on River Teviot and a singing Blackcap in the woodland on group outing. *(M.R.)*

5. 5.90 Cramond, Edinburgh: Two Orange Tip butterflies by River Almond. *(M.R.)*

12. 5.90 Birkhill Clay Mine, Linlithgow, West Lothian: Adder's Tongue (*Ophioglossum vulgatum*) (NS 968789) on old grassland and a mass of Oak Apples (galls of *Biorhiza pallida*) on a nearby oak — group outing. *(M.R.,J.L.)*

13. 5.90 Loch Katrine: Hawfinch — fleeting glimpse as it flew from the path to a tall conifer and thence into the trees on the north shore of Loch Katrine (NN 477099).*(D.A.,G.M.)*

19. 5.90 Fala Moor, Tynehead, Midlothian: *Leptoglossum lobatum* fungus growing in moss by a spring. It looks like a scoop with ridges on the underside. *(E.McA.S.)*

19. 5.90 Male plants of Dioecious Sedge (*Carex dioica*) by a spring on Fala Moor (NT 438608). Baneberry (*Actaea spicata*) in a hedge — group outing. *(M.R.,J.L.)*

23. 5.90 Whiteadder Reservoir, Lammermuir Hills, East Lothian: Round-leaved Crane's-bill (*Geranium rotundifolium*) at the picnic site below the reservoir. *(V.McF.)*

23. 5.90 Holyrood Park, Edinburgh: Small Copper butterfly on Arthur's Seat. Sweet Alison (*Lobularia maritima*) and Common Rock rose in flower on Salisbury Crags. *(M.R.)*

26. 5.90 Corstorphine Hill, Edinburgh: Both Round-leaved Crane's-bill (*Geranium rotundifolium*) and Cut-leaved Crane's-bill (*G. dissectum*). *(V.McF.)*

26. 5.90 Boddin Point, Montrose, Angus (NO 713 535): Wild Cabbage (*Brassica oleracea*) and Nottingham catchfly (*Silene nutans*) — group outing. *(M.R.)*

2. 6.90 St. Abb's Head, Coldingham, Berwickshire: Spring Sandwort (*Minuartia verna*). (M.R.)

3. 6.90 Duddingston Loch, Edinburgh: Two male Ruddy Ducks and about 30 Herons. *(M.R.)*

16. 6.90 Aberfoyle: Wood Warblers singing in oak wood. Also saw Pied Flycatcher, Siskin and Buzzard. One plant of Guelder Rose seen in flower — group outing. *(M.R.)*

23. 6.90 Longmuir Moss, Oxton, Berwickshire: A Whinchat at the old quarry (NT 496535) and two Roe Deer fawns on the Moss — group outing. *(M.R.)*

24. 6.90 Hopetoun House, South Queensferry, West Lothian: A Sparrow Hawk took a Pied Wagtail feeding at the Round Pond. *(M.R.)*

4. 7.90 Bruntsfield, Edinburgh: The large mushroom, *Agaricus augustus*, growing in a garden in leaf litter under a chestnut tree. *(E.F.)*

6. 7.90 Royal Botanic Garden, Edinburgh: Little Grebe on pond. *(C.R.)*

14. 7.90 Yellowcraigs, North Berwick, East Lothian: Two Whimbrel. *(B.C.)*

18. 7.90 Farm gateway, West Lothian (NT 031770): A large plant of *x Festulolium loliaceum*, the hybrid between Meadow Fescue (*Festuca pratensis*) and Perennial Rye-grass (*Lolium perenne perenne*). In the canal nearby, I finally identified Tufted Loosestrife (*Lysimachia thyrsiflora*), not in flower. *(J.M.)*

19. 7.90 Craigton Quarry, Winchburgh, West Lothian: Musk Mallow (*Malva moschata*) and Stinking Iris (*Iris foetidissima*) (NS 074769) — group outing. *(M.R.)*

22. 7.90 Insh Marshes, Kingussie: Striking bright purple fungus, *Cortinarius violaceus*, noted during a Botanical Society of the British Isles outing. *(J.M.)*

25. 7.90 Musselburgh Lagoons, Midlothian: Curlew Sandpiper in summer plumage. *(B.C.)*

28. 7.90 Tower Dam, Cockburnspath, Berwickshire (NT 784698): Grayling and Ringlet butterflies — group outing. *(M.R.)*

4. 8.90 Lilliardsedge, St. Boswells, Roxburghshire: Betony (*Betonica officianalis*) on Dere Street, near Ancrum Moor (NT 613278) — group outing. *(M.R.)*

7. 8.90 Edinburgh: At 25 minutes and four seconds to one-o'clock this afternoon the time and date were 1234567890. *(D.G.)*

9. 8.90 Mochrum, Galloway: Barn Owl. *(D.G.)*

20. 8.90 Loch Ordie, Ballinluig, Perthshire (NO 031505): Adder on grassy path — a large specimen with black diamond pattern along its back. Made much noise in its anxiety to escape into longer grass. Adders are more plentiful and widespread than is generally believed. On 30 April one was seen in Glen Quaich, Perthshire and another at Hopes Reservoir, Gifford, East Lothian on 4 August. *(D.A.,G.M.)*

4. 9.90 Boat of Garten, Grantown-on-Spey: Large numbers of the Bolete (*Leccinum duriusculum*) growing under aspens. *(E.F.)*

5. 9.90 Coylum Bridge, Aviemore: The large milkcap (*Lactarius representaneus*) growing under conifers. The white milk, and any bruised area, turns violet. *(E.F.)*

8. 9.90 Holyrood Park, Edinburgh: A Wood Warbler — presumably a bird of passage. *(C.R.)*

9. 9.90 Dumfries: Four Cormorants at the Caul at Dumfries. One caught an eel which remained visible and alive in the neck of the bird for many minutes. *(E.McA.S.)*

11. 9.90 Blackhall, Edinburgh: Vixen and four cubs in garden. *(E.S.R.,M.R.)*

14. 9.90 Union Canal, near Philpstoun, West Lothian: Swallows flying down to the canal and either drinking or taking flies off the surface. Which? Informed by a local that the swans nested on the towpath again.

In a very overgrown, marshy patch by the Haigh Burn to the south specimens of Blue Water Speedwell (*Veronica angallis-aquatica*) reaching to my chin! *(J.M.)*

26. 9.90 Active rubbish dump, north of Winchburgh, West Lothian: Lesser Swine-cress (*Coronopus didymus*), Small Melilot (*Melilotus indica*) and Eastern Rocket (*Sisymbrium orientale*) together with the hybrid grass *x Festulolium loliaceum* and many more common ruderal plants. *(J.M.)*

1.10.90	Firth of Forth: 20+ Little Gulls, Black Tern, Great Skua, Arctic Skua and Manx Shearwater — group outing on the Gardyloo.	*(B.C.)*
13.10.90	Cramond, Edinburgh: Whooper Swan.	*(E.S.R.,M.R.)*
13.10.90	Linlithgow, West Lothian: Dead adult badger by the M9 west of Linlithgow (NS 964784).	*(D.G.)*
14.10.90	Doune Ponds, Stirling: Large number of *Phaeolepiota aurea* growing in groups. In a grassy clearing, a clump of an orange-pink gelatinous fungus was identified as *Tremiscus helvelloides*, which is a rarity in Scotland. B.S.E. outing.	*(E.F.)*
23.10.90	Hopetoun House, South Queensferry, West Lothian: Large flock of Redwings.	*(M.R.)*
27.10.90	Haddington, East Lothian: Kingfisher on River Tyne.	*(B.G.)*
3.11.90	Logan, Mull of Galloway: The split gill fungus, *Schizophyllum commune*, growing on split silage bags.	*(E.McA.S.)*

Stonechats

Stonechat seen in field near Ratho on 30 December 1989. This species appears to have increased in numbers recently, probably as a result of the mild winters. An individual was seen in the Pentlands on 23 April 1990, four birds near Loch Kennard (NN 905460) in the same month and one on Deuchary Hill (NO 035500) in May.

Crossbills

There seems to be a population explosion this year. A continental influx? Crossbills were seen everywhere in the Aberfoyle area of the Queen Elizabeth Forest Park on 25 November 1990. On 4 November they were as numerous in Craigvinean Forest, Dunkeld, and one or two birds were spotted at Tweedsmuir on 21 October.

D. Adamson, G. McDougall

Finches

On a sycamore (*Acer pseudoplatanus*) in Arboretum Avenue, Edinburgh, there was a mixed flock of Greenfinches and Chaffinches, some 20 or so, feeding vigorously on 5 November 1990. They were picking something off the twigs and branches, something small, but obviously plentiful. I suspect it was some emerging insect, but have no idea what it might be. Can anyone help?

Gulls

A Black-headed Gull was seen to perch on a top spray of a well-laden Holly tree in Inverleith Park Rose Garden, Edinburgh, on 9 November 1990. It then fed off the berries. In order to keep balanced it held the wings outstretched, constantly adjusting them. I watched it take four berries. A second bird was seen to adopt this feeding method, or it may have been the same bird. Three other Black-headed Gulls were seen to hover and take berries.

C.P. Rawcliffe

Oyster-plant

Last summer, we rejoiced in the return to East Lothian of the Oyster-plant (*Mertensia maritima*) on a fine large-pebbled bank above the high-water mark on Dunglass beach. It was an ideal habitat for the plants, but alas, a combination of northerly gales and very high tides during the past winter resulted in that bank being swept over by the seas, and the pebbles largely overlaid by sand. The Mertensia has not reappeared, but in its place are several plants of Sea-rocket (*Cakile maritima*) which were not present last year. This story seems to illustrate the tenuous hold of sea-shore plants in a constantly shifting habitat.

Marsh Woundwort

Hitherto, there has been a very fine stand of Marsh Woundwort (*Stachys palustris*) at the mouth of Dryburn Water, near Skateraw, East Lothian, but this year the burn has lived up to its name only too well, and the Woundwort only grew to about half its usual height and flowered poorly.

M. Watson

Roe Deer

On 20 July 1990, we overnighted in a camper van on part of the old Devil's Elbow road south of Braemar at a height of about 600 metres altitude. In the morning in the clear air the outlook was superb if rather severe. A burn lay before and well below us, backed by several hundred feet of steep heather and boulder slopes. There wasn't a tree or bush for miles. Two brown shapes at our level on this opposite slope proved to be Roe Deer grazing. Some time later we noticed a more rapid movement and binoculars showed the buck in close pursuit of the doe. She ran and rounded one or two rocks before settling to a steady rhythm round two large boulders perhaps 5 or 6 yards apart, in the typical figure-of-eight pattern. The buck followed close behind and they kept this up for perhaps upwards of 20 figure-of-eights before she broke rank and ran for a short distance up the slope. The buck immediately broke off the chase and both soon started to feed some distance apart. We did not see which animal began the performance but the buck did not appear to be the dominant partner as the doe entered the figure-of-eight and when she left this, the buck made no attempt to carry on the chase. One occasionally sees where Roe have been running 'rings' in woodland but we have not previously seen a live performance.

R.W.J. Smith, E.M. Smith

A matter of life and death

While visiting a pond in the Culbin Forest we noted a female Common Hawker dragonfly (*A. juncea*) obviously struggling in the water. Normally this species, when ovipositing, clings to emergent vegetation, e.g. rushes, and lowers her abdomen beneath the water inserting her eggs into the stems/leaves under the surface. When she was fished out a 1½ inch larva of a Dytiscus species (water-beetle) was found hanging on to her abdomen by its pincer-like fangs. The larva was removed with a struggle and returned to the water, and the dragonfly was laid on some vegetation to recover. Some time later, we again looked at the dragonfly to find it was dead — no doubt as a result of the juices injected by the fangs of the beetle larva. The incident was a sharp reminder of the 'jungle' of predator-prey relationships that occur on and beneath the water surface of any ordinary pond and the futility of trying to intervene to 'save' any 'victim' that catches our attention.

E.M. Smith

"Eyes and no eyes"

Being familar with one's neighbourhood often means that one does not really see what is there. I've had one or two surprises lately when I opened my eyes in my own district. For example, one day it struck me that the evergreen tree at the back of Safeway, Comely Bank, Edinburgh, is a Holm Oak (*Quersus ilex*). Walking a little further than usual, I looked into the garden where the Walnut tree grows near the pedestrian crossing in Stockbridge and found a Fig tree growing in the other corner. At Hopetoun Estate, South Queensferry, I was exploring the woodland when I came upon a Himalayan Tree Cotoneaster hidden behind two cherry trees. Quite close to it was a shrub which I hadn't noticed before. This turned out to be Common Nine Bark (*Physocarpus opulifolius*). I must have walked countless times past a garden in Craigcrook Road without seeing a beautiful Paperbark Maple (*Acer griseum*) and a closer look at a 'weed' in a neighbour's garden revealed Pale Toadflax (*Linaria repens*).

Camperdown Elms, Aberlady

Members are doubtless all familiar with the two unusual elms at the entrance to Aberlady Church where we meet each November for Charles Pountain's popular walk to Kilspindie. There was a third elm a little further along, in one of the gardens at the S bend in the road approaching the Green. Unfortunately, this elm was cut down two or three years ago and I'm afraid this is to be the fate of the other two trees which are now suffering from the Dutch Elm disease. We shall miss them very much.

Note: 'Camperdown' Elm is known as the common weeping elm, grafted on a straight bole of Wych Elm (*Ulmus glabra*), its spreading, tortuous branches weeping to the ground (from Alan Mitchell, *Trees of Britain and Northern Europe*).

M. Robertson

Forth island bird counts, 1990

	Craigleith	Lamb	Fidra	Eyebroughy	Inchkeith	Inchmickery	Carr Craig
Fulmar	138	3	171		443	7	
Cormorant	116	80		49			182
Shag	522	290	116		19	28	23
Great Black-backed Gull	6		1+				
Lesser Black-backed Gull	X	5	X		X	950	
Herring Gull	X	X	X	50	X		41
Kittiwake	850	187	598		556		
Common Tern						141	
Roseate Tern						0	
Sandwich Tern						418	
Razorbill	60	33	75		60		
Guillemot	1570 bs	2400	89		70 bs		
Puffin	550 bs	*c*5	150		700 bs		

X is present but uncounted.

All counts are of nests or occupied sites except for those of Guillemot and Puffin which are of individual birds. Once again the RSPB has kindly provided the counts for Inchmickery. For many years now the counts have shown a general increase of most of our seabirds with perhaps a tendency to 'level off' recently. This year there is an obvious reversal of that trend with fewer breeding pairs of most species. Only Cormorant bucked the trend with some 40 extra nests counted. The East Lothian islands had their standard 235 nests while Carr Craig held a record 182. Last year we reached Carr Craig on a flimsy blown-up plastic boat launched from the Inchcolm ferry when it was near the island and we breathed a sigh of relief as, count completed, our bobbing cork was picked up by the ferry on its return journey. This year the local lifeboat did the honours and, for a donation to the service, we were safely landed on this awkward lump of rock, did our count and whizzed back in comfort to the mainland.

At Inchkeith we were able to get over courtesy of the 'Pride of Inchkeith'. This very fine boat runs most Sundays from Granton to Inchkeith carrying supplies to Mrs. Kathleen Allan who lives alone on the island looking after her animal home there. The Allandale Animal Sanctuary takes care of a large collection of dogs, cats, donkeys, ponies, a pig, goats and sheep. In spite of some initial anxieties about the possible effects of all these animals wandering around there is minimal disturbance to the large seabird population and that mainly confined to the large gulls. Before Mrs. Allan's residence there were several incidents involving youths throwing eggs and killing chicks so, on balance, things are undoubtedly better now.

Once again, the weather was kind to us and the landings were made with hardly a hitch. The main counts were completed by 4 June, a fortnight earlier than in 1989, and we may well have missed a few of the late nest starters. For instance, Fulmar and Puffin counts can involve some non-breeding birds and are possibly low. However, there is a definite drop of about 2.5% in the numbers of breeding Shags and around 10% in Kittiwakes. On Fidra one bay with several small cliffs had a nice group of about 40 Kittiwake nests in 1989. This year most of these nests had been repaired and lined with grasses and three nests even held a single egg but they had all been deserted obviously just when laying was beginning. The reason for this desertion became clear when we found a nest of Carrion crow with two tiny young in the middle of the colony. A crow's nest on Craigleith was less successful with the small young there found lying dead on the ground below the nest possibly caused by 'big gull' disturbance. Finally, although four pairs of Oystercatchers breed regularly on Fidra, a clutch of three eggs on the Lamb was a first for the island.

R.W.J. Smith

EXCURSIONS 1990

Key for excursions:

B	Botany	Fr	Freshwater flora and fauna
Bat	Bats	G	General
C	Conservation	Ge	Geology
Ent	Entomology	O	Ornithology
F	Fungi	T	Trees

Day excursions

1990			Leader
20 Jan	a.m Lochore Meadows Country Park, Lochgelly, Fife	G	
	p.m. SSPCA Oiled Bird Cleaning Centre and Seal Treatment Unit, Dunfermline, Fife	OC	Mrs. S. Hogben
24 Feb	a.m. Royal Museum of Scotland	G	Dr M. Shaw
	p.m. Bawsinch, Duddingston, Edinburgh	G	Mr. C. McLean
24 Mar	Coastal Hop — Port Seton to Aberlady	G	Mrs. M. Robertson
21 Apr	The Woodland Centre, Ancrum, Jedburgh	T	Mrs. A. Ingles
5 May	Pepper Wood, Kirkliston, West Lothian	C	Mr. G. McDougall
12 May	Birkhill Clay Mine, Linlithgow, West Lothian (NS 968789)	B	Miss J. Muscott
14-20 May	How Hill Field Centre, Ludham, Norfolk	G	Mr. D. Holmes
19 May	Fala Flow, Tynehead, East Lothian (NT 428585)	Fr	Mr. D. Jones
26 May	Scurdie Ness and Boddin Point, Montrose, Angus — with Dundee Naturalists Society	B Ge	Mr. J. Cook
26 May	Bass Rock with SOC	O	
27 May	Lamb and Fidra with SOC	O	
2 Jun	Craigleith (Island) with SOC	O	
2 Jun	St. Abb's Cliffs, Berwickshire	B O	Miss M. Woolgar
9 Jun	Dunkeld, Perthshire	B G	Mr. D. Adamson
16 Jun	Aberfoyle, Perthshire	B G	Mr. D. Hunter
23 Jun	Longmuir Moss, Oxton, Berwickshire	B G	Mr. M. Braithwaite
30 Jun	Burncleugh Centre, Eskdalemuir, Dumfriesshire	T G	Mr. R. Rose
7 Jul	Glen Lochay, Killin, Perthshire	B	Mr. J. Winham

14 Jul	Yellowcraig Country Park, North Berwick, East Lothian	BOGe	Mr. W. Clunie
21 Jul	Craigton Quarry and Canal, Philpstoun, West Lothian	B	Mr. G. McDougall
28 Jul	Penmanshiel, Cockburnspath, Berwickshire	G	Mrs. M. Watson
4 Aug	Soutra Aisle, Midlothian, and Dere Street, Roxburghshire	G	Mrs. C. Stewart
11 Aug	Kinmonth Deer Park and Moncrieffe Hill, Bridge of Earn, Perthshire	G	Mrs. M. Clarkson
18 Aug	Dunbar Castle Coast Walk	G	Mrs. M. Robertson
25 Aug	Charlestown and Roscobie, Dunfermline, Fife	Ge	Mr. W. Baird
1 Sep	Hope's Reservoir, Gifford, East Lothian (NT 550620) with Botanical Society of Edinburgh	F	Dr. R. Watling
8 Sep	Brethren Cairns, Southern Upland Way, Yarrowford, Selkirkshire	G	Mrs. J. Lyburn
15-17 Sep	St. Andrews, Fife	G	Miss M. Woolgar
22 Sep	Bowhill, Selkirk with Botanical Society of Edinburgh	F	Mr. S. Roberts
20 Oct	John Muir Country Park, Tyninghame, East Lothian	O	Mr. W. Clunie
17 Nov	Musselburgh and Aberlady	O	Mr. C. Pountain

Evening excursions

16 May	Bavelaw Reservoir, Balerno, Midlothian	O G	Mr. W. Clunie
6 Jun	South Queensferry to Pepper Wood, Kirkliston, West Lothian	B	Mr. J. Carlyle
13 Jun	Hawkhill Wood, Craigmillar, Edinburgh	G	Mr. A. Arnott
20 Jun	Gullane to Freshwater Haven, East Lothian	G	Mrs. M. Clarkson
27 Jun	Colinton Dell, Edinburgh	G	Miss D. Mack
4 Jul	Corstorphine Hill, Edinburgh	G	Mrs. M. Robertson
11 Jul	Carberry Towers Arboretum, Whitecraig, East Lothian	T	Mrs. V. McFarland
18 Jul	Flotterstone, Penicuik, Midlothian	G	Miss D. Mack
25 Jul	Tailend Moss, Bathgate, West Lothian (NT 005678)	OBEnt	Mr. G. McDougall Mr. D. Adamson
8 Aug	Bush Estate, Penicuik, Midlothian	F	Dr. P. Mason
22 Aug	Almondell Country Park, Midcalder, Midlothian	Ent	Miss M. Konik
29 Aug	Almondell Country Park, Midcalder, Midlothian	Bat	Miss M. Konik

Evening study sessions

15 Jan	How to recognise trees in winter	Mrs. V. McFarland
5 Mar	The way birds live	Mr. R.W.J. Smith
2 May 9 May 23 May 30 May	A practical guide to the main plant families in Scotland	Dr. I. Edwards
28 Nov	Twigs in winter	Mrs. C. Stewart

These study sessions were held in the Society's room at Donaldson's School for the Deaf. The series of meetings under the guidance of Ian Edwards introduced to the Society a more formalised type of study. They were well received and will hopefully be built on in the future.

REPORTS AND ABSTRACTS FROM REPORTS

Royal Museum of Scotland, Edinburgh — 24 February 1990

Members of the Society had a fascinating glimpse of the work involved in the preparation of displays for the public. This must be true of all departments though we confined our interest to the Natural History Section.

Mr. Geoff Swinny took us to his workshop where the preparation of specimens in natural poses takes place. Here, material was being prepared for the new fish gallery which should be ready in 1991. In modern presentation the animals are pinned in to natural poses and when they are set, then cast in fibre glass. Minute detail is reproduced. The mould is then mounted and painted — real skill comes into this stage of the work. The result is a light, robust model of an individual specimen.

Rubber moulds are used for multiple specimens, e.g. a shoal of fish. Eyes are a problem; here the taxidermist will often make the eyes and set them in. The Lesser Spotted Dogfish and hen Seatrout examined were remarkably life-like, including the eyes.

Mammals and birds are first skinned before the specimen is cast in two halves and then the 'manikin' put together. Muscle detail comes up very well; this is important when the skin comes to be mounted. For birds, a manikin can be made of balsa wood which is easily carved.

Surprisingly, we learned that there is no formal training for taxidermy; the beginner learns by working with others. The taxidermist is always looking for new materials to help him. The manufacturers of polyfilla, for example, would be very surprised to know that their product is used to plump out a rat's tail!

Films of animals in the wild are used to get natural poses; colour photography also helps the artist to paint in detail. Daylight of course destroys both fabric and pigment; the museum is constantly trying to find ways of surmounting this problem once the specimen is on show; experiments with a variety of lighting conditions continue. All the work is very time-consuming; it requires special skills and patience, the general public has little idea of how much is involved before an exhibition is mounted, or indeed before one specimen is put on display.

Dr. Mark Shaw, Entomologist, spoke to us about the research collections which are not for exhibition. More than two million specimens and over 55 thousand skins are kept. The scope is world-wide, but for convenience they are grouped into British and exotic species, using accepted classification systems which avoid the need of a catalogue.

All specimens are kept air-conditioned and away from light. Most are dry but many are kept in spirit, e.g. amphibians, snakes and spiders. Snails and molluscs are kept in spirit as whole animals. Bird and small animal skins are lightly tanned and then stuffed with cotton wool. Insects are stored on pins and it was a relief to know that fleas are sealed on microscope slides! Bones of animals are kept in separate boxes. Everything is meticulously labelled.

Researchers may use the collections for morphological studies; microscopes and the library are available so the work can be done at the Museum. The collections also serve an educational function, to be used by museum staff for research and to answer questions on identification from the public. Artists also may use the collections for illustrative work. The specimens donated are always kept for morphological reference and checking. Two research projects were mentioned, the first being the study on the purity of the race of wild cats which are known to inter-breed with feral domestic cats. Several skulls are available for measurement and assessment. The second is a study to measure pollution, being carried out by a student using polychaete worms found in the mud of rivers. Incidently, the Museum in Chambers Street has the best dragonfly collection in the world!

M. Robertson

Bawsinch, Duddingston, Edinburgh — 24 February 1990

A group of 15 members met at Bawsinch Nature Reserve on a wet afternoon. Mr. Colin McLean of the Scottish Wildlife Trust met us and led us around the reserve.

The hide overlooking Duddingston Loch was first visited and Heron, Mallard, Goldeneye, Tufted Duck, Pochard and Great Crested Grebe were observed.

After explaining that a prime purpose of the reserve was to protect the Duddingston Loch bird sanctuary, Mr. McLean then described how the reserve was being managed in four main habitat areas.

Goose Green is an area of short grass kept for the benefit of the feral flock of Greylag Geese which presently numbers 200-300 birds. They have adopted the practice of dispersing over the Lothians at nesting time before returning to Duddingston with their offspring. We saw the preparation of a wildflower meadow and also the excavation of a pit in an area of deep sand sub-soil where it is hoped that Sand Martins will be attracted to nest in the vertical face.

The second area seen is dominated by trees and the object here is to establish all 44 native British tree species, with the tall trees on the higher ground and the wet soil-tolerant species on the lower ground. Trees examined included Spindle, Wayfaring Tree, Wild Service Tree, Juniper, Yew, Norway Maple and Small-leaved Lime. We saw how Ash seedlings were able to establish under Hawthorn but not in adjacent coarse grass. This was because Hawthorn was able to suppress the grass whilst at the same time allowing sufficient light penetration for the Ash seedlings. The natural plant succession here is coarse grass → Hawthorn scrub → Ash → Oak.

The third management area is essentially scrub. Large bushes are cut down periodically in order to maintain a shrub layer. This provides nesting sites for Whitethroat, Willow Warbler, Reed Warbler and Chiffchaff and also allows ground plants such as Primrose, Wood Violet, Red Campion, Bugle and Lords and Ladies to thrive.

The fourth habitat is the ponds. Those members of the group who had visited Bawsinch before saw that more ponds had been recently excavated and we were told that the aim is to eventually have 12 fresh water ponds with varied habitats. The oldest ponds were dug 18 years ago, the newest only months ago. The Gunn Pond excavated by the Edinburgh Natural History Society in 1984 is now looking more mature and we were pleased to hear that Bladderwort was now established in it and that a population of newts, transferred to Bawsinch from an infilled pond near Edinburgh airport, had adopted it as home.

D. Gill

Coastal Hop - Port Seton, Longniddry, Aberlady — 24 March 1990

Despite inclement weather, 20 members gathered at Port Seton Swimming Pool for what was described as a coastal hop. Before starting our hop we had good sightings, in bright light, of Purple Sandpiper, Turnstone, Knot, Redshank, Bar-tailed Godwit, Curlew, Long-tailed Duck, Red-breasted Merganser, Shelduck and Eider.

Our first hope, in cars, was to Longniddry Bents car park. Walking to the shore we saw Common Whitlow-grass (*Draba muralis*), Spring Beauty (*Montia perfoliata*) and, in flower, Coltsfoot (*Tussilago farfara*), Ragwort (*Senecio jacobaea*) and Red Campion (*Silene dioica*). We noticed that the berries on the Buckthorn, which had been profuse throughout the winter, had all disappeared. We walked along the shore but the birds were sensibly in hiding, sheltering from the wind. There was a variety of shells on the beach. In particular we noted a large quantity of oyster shells, a reminder that oyster beds off-shore were worked in the 18th and 19th centuries. As we proceeded we noticed that recent storms had caused parts of the dunes to collapse.

The next hop was to Gosford Bay car park where we lunched in the cars. This was well-timed as heavy rain was driving across the bay. After lunch, and an improvement in the weather, we hopped to Aberlady Church. Here we were shown the louping-on-stane and the two Camperdown Elms at the gates. On the shore we saw Shelduck and Mallard and enjoyed the sight and sound of Skylark. Walking eastwards we found Common Scurvy-grass (*Cochlearia officinalis*) and White Dead-nettle (*Lamium album*), and again noticed signs of storm damage, in particular that part of the wooden bridge over the Peffer Burn had collapsed.

We next proceeded to the east end of the village where we entered the grounds of Luffness Estate. We made our way along an attractive path, once more being fortunate to find shelter from heavy sleet. In the estate woodland we were interested to find Butcher's Broom (*Ruscus aculeatus*) with its leaf-like flattened stems on which flowers were showing. The wood was carpeted with Lesser Celandine and Primrose and we could see that there had been a good show of Winter Aconite and Snowdrop.

We then reached our objective which was the site of a friary of the Carmelite (White Friars) Order. We saw the foundations of a long, narrow church and, in a recess in the north wall, an effigy of a knight in 13th century armour. Close by there were two fishponds thought to have been constructed by the friars. Alerted by nuts on the ground we found several Walnut trees.

Walking a little further we had a view of a 16th century tower house where a 13th century castle may have stood, and we watched Greenfinch, Chaffinch, Pied Wagtail and Pheasant on open farmland. We then retraced our steps to the village in sunshine. Finally, on our return to the cars, we saw Redwing and Mistle Thrush.

All were agreed that this had been a most interesting and enjoyable outing. We were grateful to Mrs. Mary Robertson for the excellent arrangements which even extended to providing shelter from the elements at the appropriate times.

M. Jamieson

The Woodland Centre, Jedburgh — 21 April 1990

Sixteen members of the Society attended the last of our winter excursions at the Woodland Centre, Jedburgh, which is an exhibition centre opened in 1980 to provide information on trees from seedlings to furniture. There are many attractions both indoors and outdoors with a choice of woodland walks.

Ably led by Mrs. Avril Ingles, the group visited 'The Pinery' where we saw a great variety of fine specimen trees with perhaps more fir and oak than other species. Among the more unusual firs we noted *Abies concolor*, the Colorado White Fir, *Abies veitchii*, a Japanese Silver Fir with a short life, and *Abies amabilis*, the beautiful fir of British Columbia. There were many fine Douglas Firs (*Pseudotsuga menziesii*) but perhaps the finest tree was a mature Sitka Spruce (*Picea sitchensis*) looking very majestic and so very different from the spindly specimens usually seen in mass afforestation all over Scotland. Perhaps we should remember that the light, strong wood of Sitka was used to build the very fast Mosquito aircraft which operated so successfully towards the end of the Second World War.

Among the oaks, the evergreen Turner's Oak (*Quercus ilex x robur*) was admired. The Scarlet Oak (*Quercus coccinea*) was pointed out, though autumn would be the best time to admire this tree with its brilliant red leaves, and the Hungarian Oak (*Quercus frainetto*), a vigorous tree, showed its straight, radiating branches to advantage.

Winter gales had uprooted several trees — sad to see these fallen giants, but they make valuable timber.

In the afternoon, members followed their own interests. Some of us took the 'Green' path up to the Wellington monument on Penielheugh, through an avenue of magnificent Giant Sequoia, the Wellingtonia, named after the Duke. Mist covered the hills so we were denied the fine views. We were delighted to hear Chiffchaff and Blackcap among the woodland birds; we also had the pleasure of seeing Goosander and Sand Martins at the River Teviot. Primrose, Cowslip and their hybrid, the False Oxslip, were seen. Mrs. Ingles had pointed out a small patch of Moschatel in the morning, more of which we discovered in the afternoon. Other members remained to see the various exhibitions on aspects of estate life and natural history at the Centre.

We wish to thank Dr. Rosemary Evans of the Woodlands Centre for her assistance in organisation and Mrs. Avril Ingles who was such an excellent guide.

M. Robertson

Pepper Wood, Kirkliston, West Lothian — 5 May 1990

A work party of about 20 armed with spades, garden forks and plastic sacks turned out for the first Saturday excursion of the summer programme. The object was to remove some of the White Butterbur in the wood, which was threatening to smother all other wild flowers. The group spent a busy morning and from the piles of Butterbur produced it seemed likely that the plant would have received a severe setback.

The afternoon was spent on the nearby banks of the River Almond in lovely sunny conditions. The willows and Red Campion by the path allowed the party to see 'in the field' what they had learned at Dr. Ian Edwards' class a few days earlier.

M. Clarkson

Birkhill Gorge and Clay Mine, Linlithgow, West Lothian — 12 May 1990

Between Birkhill and Inveravon the River Avon flows through a deep gorge, which has been declared a Site of Special Scientific Interest by the Nature Conservancy Council. The Birkhill end of the SSSI is also of industrial interest, for fireclay was mined there until quite recently, and part of the mine has now been turned into a museum. (An additional bonus for steam-train addicts is the possibility of starting the trip from Bo'ness, and taking the newly-revitalised railway to Birkhill and back.)

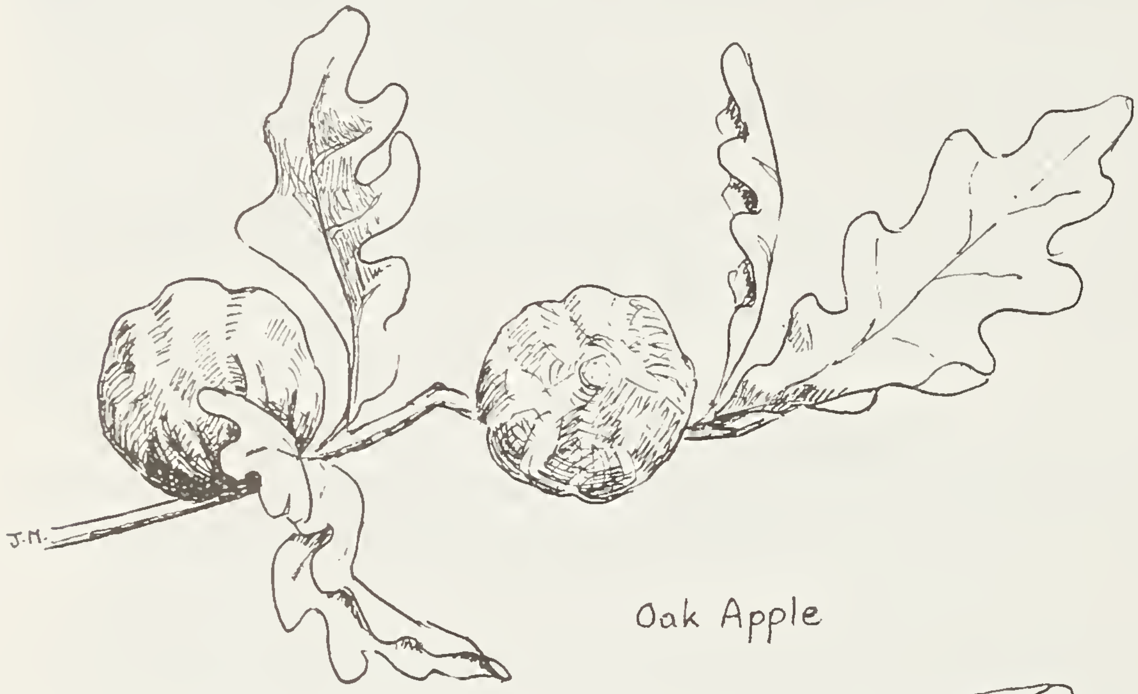
About 20 members of the Edinburgh Natural History Society arrived in rather less adventurous fashion by car on a fine but rather chilly day in May. Alan Silverside joined us from Glasgow, which meant a rather more concentrated study of waste ground than might otherwise have been the case (not to mention the identification of one or two fungi). Among the more interesting waste-ground plants were specimens of *Geum x intermedium*, the hybrid between Herb Bennet and Water Avens, also *Arenaria serpyllifolia* (Thyme-leaved Sandwort) and *Reseda luteola* (Weld), the one only a few inches high, the other several feet, but both plants which colonise dry places. There were also two pairs of close relatives growing in convenient proximity: *Cerastium fontanum* (Common Mouse-ear) and *Cerastium glomeratum* (Sticky Mouse-ear), and *Barbarea vulgaris* (Common Yellow Rocket) and *Barbarea intermedia* (Intermediate Yellow Rocket). It is always handy to be able to study the differences!

It was now time to go underground and have a look at the old mine workings. The fireclay lies below many layers of sand and mud laid down during the carboniferous period, when forests of giant ferns and clubmosses grew amid the swamps of the Forth Valley (fossilised roots can still be seen in some of the workings). Subsequently, the land was raised up, then scraped down by ice, and deeply cut by rivers. The Avon had eventually cut through the layer of clay, which could be mined from tunnels cut horizontally into the side of the gorge.

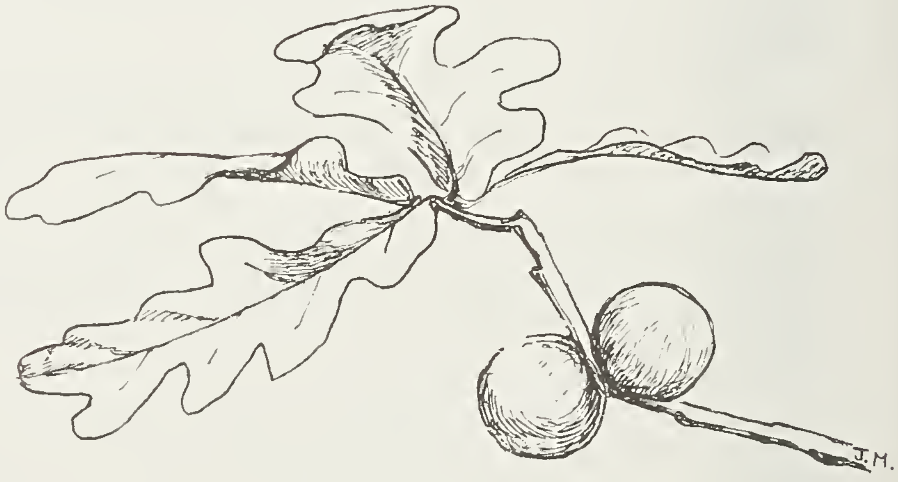
A number of plants indicate that the gorge has been wooded for a long time, probably since the trees returned after the Ice Age. Indicator plants include *Mercurialis perennis* (Dog's Mercury), *Anemone nemorosa* (Wood Anemone), *Adoxa moschatellina* (Town-hall Clock) and *Hyacinthoides non-scripta* (Bluebell/Wild Hyacinth), all of course native species. But a number of quite recent introductions are also well-established here: *Doronicum pardalianches* (Leopard's-bane), *Montia sibirica* (Pink Purslane — though flowers are often white), and *Tolmeia menziesii* (Pick-a-back Plant). The woodland is also a good place for mammals such as foxes and Roe

Deer. Indeed, otters have been seen in the area and Pipistrelle Bats now live in one of the former mine-workings. Some members of the party caught sight of a Kingfisher soon after our arrival and most saw Dippers by the water, while Swallows and Swifts, newly arrived from Africa, wheeled overhead.

We lunched in the 'Meadow' above the gorge, which the local preservation society is trying to clear of scrub and bracken to encourage wild flowers, and here we had the most exciting find of the day. For while one party watched the steam-train come and go, another group sat down, in time-honoured fashion, on a rarity — *Ophioglossum vulgatum* (Adder's-tongue). (This tiny fern caused a lot of excitement when it was discovered in Holyrood Park last year.)



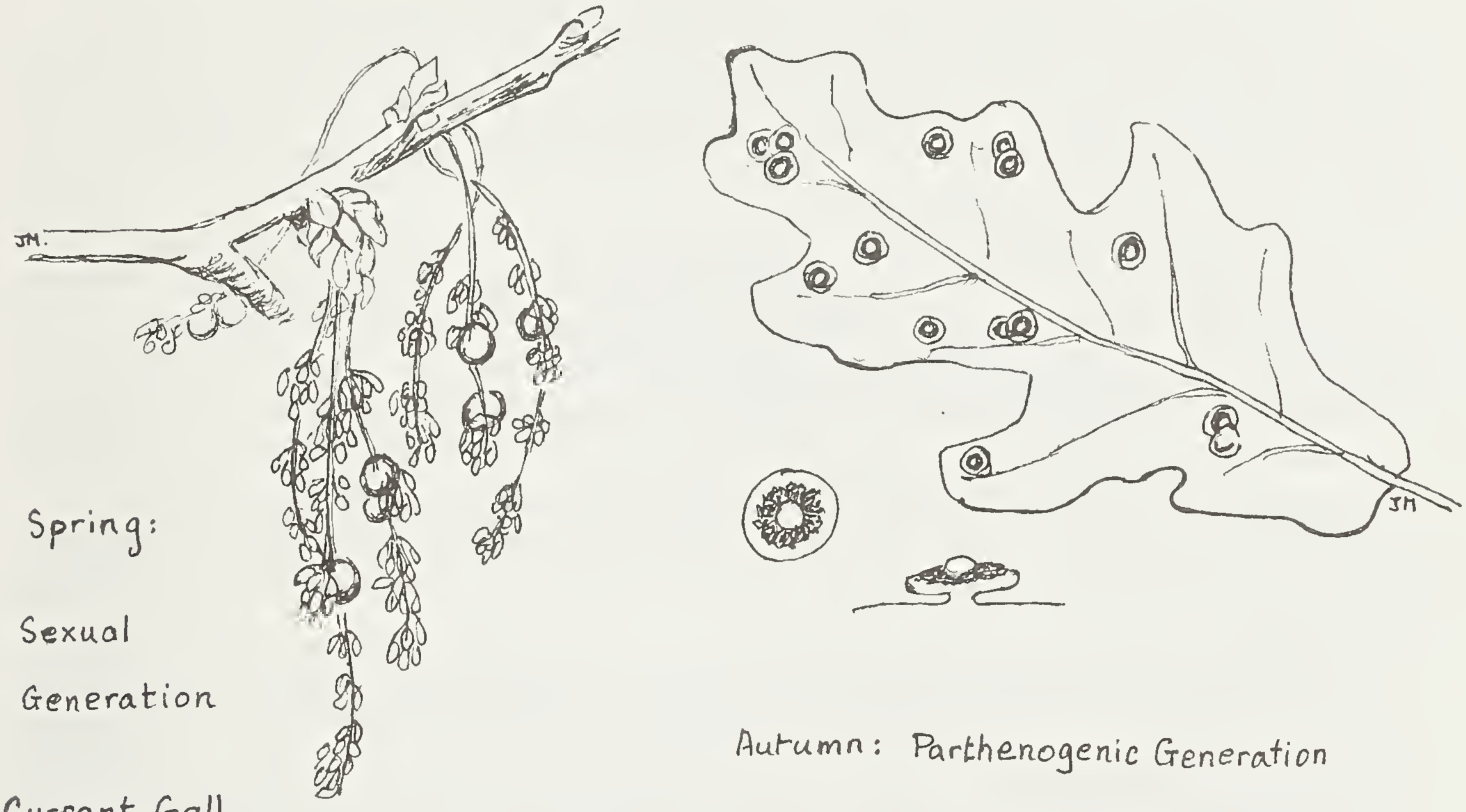
Oak Apple



Marble Gall

The meadow also revealed a young oak tree laden with Oak- apples. I had never seen so many before. These large, fleshy galls, about the size of a crab-apple, are caused by a wasp, *Biorhiza pallida*, which lays its eggs in the young twigs. The oak forms a large cyst round the eggs, and when we broke one open we could see the developing grubs inside. Oaks suffer from (or tolerate, for they don't seem to be unduly harmed) a great number of galls. Another which is commonly found on the twigs of young trees is the Marble Gall caused by the wasp *Andricus kolleri*. This gall becomes quite hard, and is smaller than an Oak-apple, being about the size of a standard marble.

From the top of the gorge we could get quite close to the dangling male catkins of the more mature oaks — and these had been infected by yet another gall-wasp, *Neurotus quercusbaccarum*. Like many insects (e.g. aphids), this wasp can reproduce both sexually and asexually. It reproduces sexually in the spring, when it lays its eggs in the male catkin, and causes the aptly-named Currant Galls which were visible amid the flowers at Birkhill. In the autumn it reproduces asexually and lays on the underside of the leaf, producing the equally well-named Common Spangle Gall.



Spring: Sexual Generation

Currant Gall

Autumn: Parthenogenic Generation

Common Spangle Gall

Galls caused by *Neuroterus quercusbaccarum*

Anyone interested in galls should join the British Gall Society, and/or get hold of their splendid little handbook, *Provisional Keys to British Plant Galls*, edited by F.B. Stubbs.

J. Muscott

Norfolk — 13-20 May 1990

Our week's holiday started unofficially in Hunstanton when some of our party met and we began to explore Norfolk in early summer. After admiring the unusual three-layered cliffs of Hunstanton Beach, we went to nearby Snettisham. Being a Monday and quite cold we had the beach to ourselves, and soon were straggled over the beach, each intent on his/her own interest. One plant caused discussion — a Sea Campion but with a smooth, pale-green calyx tube — definitely not a Bladder Campion. It is impossible to name every plant seen but included were Spring Beauty, the basal leaves of the Yellow-horned Poppy and Mullein, Bur Chervil, Buck's-horn Plantain, Stonecrop, Early Forget-me-not, Sea Beet, Sea-blite, Bluebell (English), White Bryony, Fumitory, the dried heads from last autumn's Teazles, Wild Mignonette, and the lovely Star-of-Bethlehem. Birds seen on the beach and water included Dunlin, a family of Skylarks, Tufted Duck, Shelduck, and two Ringed Plover with two immatures.

That afternoon gave me the first of the week's highlights when we visited Holme Nature Reserve. We heard of the arrival of a Bluethroat, possibly blown in by the spring gales. Occasionally there have been up to 15 Bluethroats in the reserve but that is very rare, so once given the area of the latest sighting we waited. Our patience was well rewarded on seeing this

Robin-like bird. In the spring and summer the males have a gorget of bright metallic blue, banded by black, white and red, with a splash of red in the centre of the blue bib. Being shy, Bluethroats stay well hidden in the scrub, so we were extremely fortunate to see him for a long time grubbing for insects at about 30-50 yards.

This reserve with several pools proved to be a haven. Apart from the 'usual' visitors, there were two Red-legged Partridges, a Snipe, Wood Sandpiper, Yellow Wagtail, Wheatear, Heron, Linnet, Spotted Redshank, Canada Goose, Bar-headed Goose, Whitethroat and Whimbrel. We saw two Common Tern; one when it had caught a fish gave it to its mate. Plants included Spring Vetch, Black Medick, Sea Buckthorn, Corn Salad, Rue-leaved Saxifrage, Hound's-tongue, Bugloss, Creeping Buttercup and Silverweed.

The following day was better weather-wise, warm and sunny. We went to Titchwell, one of the RSPB's reserves. There were good views of both male and female Marsh Harriers hunting low over the reeds. In the same area, Bearded Tits were seen in the scrub and reedbeds. Cuckoo and Chiffchaff were heard though neither was seen. Reed Warbler and Reed Buntings were also seen, and a Short-eared Owl flying over the marshes. Down by the water's edge there was a lot of activity. Avocets, symbol of the RSPB, were standing in their beautiful black and white elegance. A Cormorant — somewhat scruffier than the Avocet — caught an eel, and provided us with much amusement before he mastered the struggle and swallowed it! Grey Plovers and Turnstones were seen and many common birds were either bringing up broods or sitting on eggs.

There were quite a few butterflies and damselflies: the Small Copper and Wall Brown butterflies were quite noticeable, and the damselfly, *Ischneura elegans*, was seen.

We then headed south for How Hill, Ludham, the nature study centre where we would spend the rest of the week, and where we met the rest of our party. After being warmly welcomed and given a marvellous dinner we went to the library where Mr. David Holmes, the Director of How Hill, showed us slides and told us the interesting history of How Hill. This long rambling thatched house in its own massive grounds overlooks beautiful fenland and dykes (canals).

The first morning of our stay at How Hill was warm and we toured the estate. One of the first things we saw was a rather magnificent Judas Tree. This is so named as the heavy flowers (which come before the leaves) look like droplets of blood, especially as they often come from the trunk itself, and it really looks as if the tree is bleeding. There are thousands of plants in the estate, many rare to northern eyes. Californian Glory (*Cornus cusa*), Ground Ivy, Water Starwort, Marsh Violet, Corydalis, Cut-leaved Bramble, Marsh Pennywort, Water-cress, Marsh St. John's Wort, Amphibious Bistort, Water Mint, Greater Spearwort, Lesser Spearwort, Milk Parsley, Red Elder, Red Campion, Hemlock, Yellow Water-lily, Meadow Thistle, Marsh Thistle, Marsh Violet, Floating Rush, Bogbean, Bog Stitchwort, Marsh Fern and Royal Fern are only a few. The Dawn Redwood is found here: at one time it was thought to be extinct but was found in China, the How Hill redwood being one of only six seedlings brought out of China.

The waterways belonging to How Hill are also extensive, and support much bird life. A Hanser was seen — the Norfolk word for Heron. A Little Owl was heard, and we saw an abandoned Reed Warbler's nest, Little Ringed Plover, Lesser Whitethroat, a Zebra Spider, a toad, Peacock and Orange Tip butterflies and a red damselfly.

That afternoon we met Eric, the marshman, who gave us an extremely interesting talk on reeds, sedges and thatching. The best thatch comes from 'Norfolk Reed' which can last for 50 years, while the so-called 'Devon Reed' lasts for less than half this time. 'Norfolk Reed' refers to the true Reed (*Phragmites australis*) while 'Devon Reed' is straw from wheat or barley. The Great Fen Sedge or Saw Sedge (*Cladium Mariscus*) which unlike the Reed is flexible is used for ridging, but as its name suggests the saw-edge can rip your fingers or shins. A good thatched roof can last a lifetime, but it is expensive. Mr. Holmes estimated it would cost about £20,000 to re-thatch the small How Hill boathouse! We then continued in two boats up the dykes stopping to see the Crested Buckler Fern. The profuse Ragged Robin is an alternative food of the Swallowtail butterfly (the main food is Milk Parsley). Pochard, Tufted Duck, Heron and Shelduck were seen. The holly trees were in flower, and we saw a Tiger Moth caterpillar and a Peacock butterfly.

The next day included a visit to Winterton Dunes where we were thrilled to find a large pond in the sandy scrubland full of Natterjack Toads. After all our excitement and noise had died down, the Natterjacks began softly calling to each other, until the sound was a great chorus from all over the pool. These small creatures are attractive (in their own way!) with the distinguishing yellow line down the back.

The first trip the next day was to the Cley Marshes, and on one of the waterpools a Spoonbill and Black-tailed Godwit were sighted. We were fortunate to hear a Bittern booming twice, though it would have made the holiday to have seen it! An unusual sight was that of a Heron being "buzzed" by an Avocet. Hawkweed, Mouse-ear and Cat's-ear were also seen at Cley. We watched a Water Vole chewing a reed, and passed several Reed Buntings and Sedge Warblers.

We had a short visit to Salthouse Heath in the hope of seeing/hearing a Nightingale, but this was not to be. However, a spider nest with hundreds of newly-hatched spiders created some interest.

From there we went to Beeston Marsh. Here we saw Dodder. This parasite looks like extremely long spaghetti dipped in tomato sauce, and lives on the gorse bushes. When the sun illuminates it, it is a most spectacular sight. A huge area of Common Nettle was absolutely black with the caterpillars of the Small Tortoiseshell butterfly. There was also Marsh Valerian. We found a Funnel-web Spider and also a Caddisfly larva which was encased in its armour of tiny stones.

Before we set off on our last day under the direction of Mr. Holmes, he showed us his nursery of Swallowtail butterflies. They pupate in the reed beds, and as the reeds are cut in the winter for thatch, then they would be destroyed. However some are saved and kept at How Hill until ready for release. They were absolutely beautiful.

Our outing was a boat trip up the Broads to Barton Water. At one stop the Marsh Stitchwort was found. A Great Crested Grebe sat regally on her nest: Mr. Holmes told us of a children's visit — one little girl had misheard and called it the "Great Custard Cream". We saw two Greylags, proudly showing off their family of eleven! Apprehension gripped us when we saw a wet hand with fingers stretching out of the water but closer inspection proved it to be a pink and empty rubber glove.

Our final day was on our own and we found varying interests.

Grimes Graves: These flint mines date from 2,000 BC, and necessitate going down a 30 foot ladder to crawl into the caves where bands of flint and chalk can be seen.

Pingos: They are the pools which intersperse the grassland and in the Ice Age were low hillocks. In winter the sub-surface water froze to form lenses of ice; in summer the thaw pushed the soil downwards around the base. Thus shallow water craters were formed. Great Yellow Cress and Water Violets were seen on the pingos.

Weeting was the home of some Stone Curlews, odd-looking birds with strange yellow eyes which blend in completely with the sparse sandy surroundings.

Lakenheath: The woods there provided fleeting views of two gorgeous Golden Orioles which have a lovely flute-like call. The Great Spotted and the Lesser Spotted Woodpeckers were also there.

The week flashed by. Space permits only a little of what we saw and learned, but all at How Hill had a marvellous time, which was due in no small measure to the expertise and knowledge of our leader, Mr. David Holmes.

K.L.S. Manson

Scurdie Ness and Boddin Point, Montrose, with Dundee Naturalists Society — 26 May 1990

Our joint meeting with the Dundee Naturalists Society took us to the Angus coastline. We met near Boddin Point (NO 713535). This rocky stretch of coastline is of particular importance for the range of saltmarsh communities present and for examples of unimproved and species-rich grassland which supports a wide range of uncommon plants. These areas also support a diverse mollusc fauna, with over 30 species of snails recorded.

We began walking down to the limekiln. Even before we parked the cars we saw Nottingham Catchfly (*Silene nutans*), a national rarity, growing in profusion on the roadside banks. It also 'scrambles' down the cliffs here beside Sea Thrift (*Armesia maritima*) and Sea Campion (*Silene maritima*). Fulmar and Herring Gull were nesting on some ledges. We watched House Martins collecting mud where a stream trickled down the cliff and a solitary female Swallow preened. In the grassland around the limekiln we found Bulbous Buttercup (*Ranunculus bulbosus*), Meadow Cranesbill (*Geranium pratense*), while Red Fescue (*Festuca rubra*) and Carline Thistle (*Carlina vulgaris*) were pointed out to us. Many lichens coloured the stones of the kiln itself. Rafts of eider floated on the sea.

On to the cliffs where we saw vetches, Early Purple Orchid (*Orchis mascula*), Burnet Saxifrage (*Pimpinella saxifraga*), the striking creamy-yellow flower of the Wild Cabbage (*Brassica oleracea*), and a wide range of grasses. The Elephant Rock was pointed out and we had lunch beside an old churchyard with curious gravestones. Skylark and Yellowhammer were singing. While poking around the wall behind us we saw many White-lipped Snails noting that they were striped among the grasses and self-coloured on the stones themselves.

Leaving the cliffs to continue along the rocky shore, we came to the famous 'blue hole', known in Victorian times for agates, then lost and now refound. Along this stretch of coast it was very obvious that thoughtless amateur stone seekers had smashed up areas of rock looking for these goodies. We met a local man carrying several good agates in a plastic bag, all found without a hammer by walking along the low tideline.

About half way to Scurdie Ness is Mains of Usan which we explored in some detail to obtain an up-to-date record of the flora. This is an area of 'perched' saltmarsh, very rare along the Angus coastline, found around the high waterline. Behind are unimproved and species-rich grasslands. We found Kidney Vetch (*Anthyllis vulneraria*) which we had seen at Boddin Point, Purple Milk Vetch (*Astragalus danicus*) and the locally rare Sea Wormwood (*Artemesia maritima*) which was growing in cracks of the rocks. Among the saltmarsh flora we found several sedges (*Carex flacca, C. distans, C. caryophylla, C. nigra* and *C. hirta*) and the Scots Lovage (*Ligusticum scoticum*). Our big feet almost squashed some fat caterpillars of the Six-spot Burnet Moth feeding on Bird's-foot Trefoil (*Lotus corniculatus*). One or two Small Copper butterflies enjoyed the sunshine on sheltered stones.

From here the land slopes more gradually to the sea with shingle beds providing nesting sites for Oystercatchers and Ringed Plovers. Very sleek cattle grazed here. We watched Redshank, a group of Turnstones, a pair of Little Terns and lots of Eider on the rocks. Far out at sea Gannets were flying; Sandwich and Common Terns were also seen. By this time it was late afternoon. We hurried along towards the lighthouse at Scurdie Ness (NO 735568), passing as we did so, a small mausoleum where an unfamiliar shrub was discovered. We identified it as the Duke of Argyll's Tea Plant (*Lycium barbarum*). We followed the road from the lighthouse to Ferry Den (NO 720567) where a car had been left to take drivers back to the starting point. We enjoyed refreshment at the local inn where fresh crabs were being offered for sale! It had been a beautiful sunny day freshened by a north-east wind.

Mr. Jim Cook was an excellent and very knowledgeable leader to whom we offer our sincere thanks.

M. Robertson

St. Abb's Cliffs, Berwickshire — 2 June 1990

Over fifty thousand seabirds nest on the 500 foot cliffs at St. Abb's Head. Enormous numbers of Guillemot nest shoulder to shoulder; almost as many Kittiwake cling to the smallest ledges possible. At the foot of the cliffs on large nests sit Shags with their green crests. Fulmar, Herring Gull and Razorbill choose different sites at different heights on the cliffs. A small number of Puffin group together in an area where their burrows may be safe from cliff-top predators. During our visit Puffins were busy with courtship display where both birds stand face to face and engage in beak-tapping. Other seabirds were at the incubation stage.

Out to sea small groups of Gannet progressed up and down the coast from the Bass Rock. All the hirundelles flew close by the cliff tops still on migration from Africa. On the Mire Loch the Mute Swans were being closely followed by six small cygnets. The Flag Iris were about to flower and Northern Marsh Orchid was abundant. Elsewhere on the reserve flowers such as Rock Rose and Thyme were less prolific than usual due to the dry, hard ground. The warden told us that they had had no substantial rainfall for approximately 18 months.

M. Woolgar

Dunkeld, Perthshire — 9 June 1990

Despite the traffic congestion in its main street, Dunkeld has resisted change and preserved its ecclesiastical character. Across the Tay, Birnam lacks the history of its neighbour but is favoured with very rich natural surroundings.

The Tay widens impressively below the bridge linking the two settlements, and the Birnam bank is lined with tall Beech, Oak and Sycamore trees. An ancient Oak, its limbs propped up by stout posts, is a descendant of Macbeth's Birnam Wood. Its neighbour, a Sycamore, equally venerable in appearance, is less than 300 years old. Wood Cranesbill (*Geranium sylvaticum*) and Globeflower (*Trollius europaea*) have established themselves on the sandy riverbank while Goosanders train their young to dive and fish in the shallows.

To the west, the steep, wooded slopes of Birnam Hill are separated from the town by the busy A9 road and the railway lines. The oak trees on the hill's lower slopes shelter Redstarts, Jays and an abundance of insects. Although much open ground has been surrendered to bracken, the funnels of Ostrich Fern (*Mattenocia strathiopteris*) have established themselves and intermingle with the Male Ferns (*Dryopteris affinis* and *D. filix-mas*) and Lady Fern (*Athyrium filix-femina*). The flat, triangular blades of Oak Fern (*Gymnocarpium dryopteris*) prefer the diffuse green light of the woods. Chickweed Wintergreen (*Trientalis europaea*) thrives in both sunlight and shade. When trees decay, strange life-forms such as yellow slime mould and a Pluteus fungus appear.

The woodlands of Birnam Hill and the banks of the Tay are part of the Birnam Circular Walk, and the members of the Society were fortunate in seeing these plants and animals when following this path on a warm June day.

D. Adamson

Aberfoyle, Perthshire — 16 June 1990

The party left Aberfoyle car park, some 18 of us, over the River Forth to the south by a narrow ancient bridge. We were making for the Fairy Knowe, a wooded hill, some 800 feet and two miles away. This was the scene of the legendary meetings with the fairies of the local minister, Rev. Robert Kirk, back in the 17th century. A mile along the road is the ancient church where the Rev. Kirk is buried. His body was supposedly spirited away by the fairies. George McDougal gave the party a fairy lecture around the grave, of all that happened. Great stuff!

On then to the Knowe doing some botanising on roadside grasses, etc. on the way. The fungi people getting into the woods to do their stuff and butterfly and insect people at their flighty pastime. Off the road to the left and up the hills, a nice gradual climb through oak woods to a flat top with an ancient Scots Pine gracing this fairy scene. Party decided to have lunch here and as we munched away, could hear the whispers of the fairies all around, somewhat disapproving. One member of the party was sure they had stolen one of his titbits he'd laid down but then Elizabeth's dog was around so I'm not so sure.

Down then from amongst the fairies to a path around the base of the hill to do some serious botanising. Found some interesting ferns including Oak, Beech, Upright Buckler and Lemon-scented. This area was good and *Carex vesicaria* was found, but the crowning glory of the walk was the Guelder Rose hanging in disarray over a silent pool with masses of its creamy-white flowers in full bloom. A sight to remember on this glorious summer's day.

R. Hunter

The Rev. Robert Kirk and The Fairies

At one time belief in fairies was widespread in Scotland and nowhere more so than in Highland Perthshire. Every clachan had its Sithean, pronounced *Sheean*, when fairies sang and danced in the moonlight. The Gaelic word appears in place names: Shiehallion, Dalnashien and Glen Shee, etc., even in Banshee. Dick's walk includes a visit to the local Sithean.

The Rev. Robert Kirk, minister here in the late 17th century, certainly believed in the Little Folk. Kirk was well liked and respected in the district. He translated a number of Psalms into Gaelic and gave generously to improving the church. Towards the end of his life, however, he spent a lot of time on the Sithean, maintaining that he was able to communicate with the Sprites and published a strange book, *The Secret Commonwealth of Elves, Fawns and Fairies*. The dress, habits and speech of the Fairy Folk is described in detail.

Tradition has it that Kirk revealed too much about this strange and secret world and that he was spirited away to Fairyland. It is said that the coffin below this inscribed flat stone does not contain his body!

Aberfoyle has moved with the times. The old church at Kirkton has been deserted for over a hundred years. Old traditions and beliefs have gone and the colourful story of the Rev. Robert Kirk almost forgotten.

"And gone are the green-coated fairies
That brightened the hillside of old
The witches that rode on the tempest,
The urisk that haunted the fold

The life of the days that have fleeted
Comes back not with vision or spell
So rest ye, dim shadows of cloudland
Ye fairies for ever fare-well."

Alexander Nicolson

(Nicolson, a Victorian
Urisk, a Brownie or Water-sprite, in evidence in Perthshire folklore.)

G. McDougall

Gullane to Freshwater Haven, East Lothian — 20 June 1990

A surprisingly large party braved flooding on approach roads and heavy squally showers throughout the evening for this visit to the East Lothian coast. The route followed the shore north-eastwards from Gullane car park and rounded the point to Freshwater Haven, returning through a coniferous wood and sand dunes.

Few birds were seen because of the inclement weather but there was a good selection of coastal plants and a marshy area in the dunes provided variety. The fungus specific to Sea Buckthorn was found (*Phellinus hippophäecola*).

M. Clarkson

Longmuir Moss, Oxton, Berwickshire — 23 June 1990

This was a joint meeting with the Borders Support Group of the SWT and we met our leader, Mr. M. Braithwaite, at Carfraemill Hotel before driving a few miles to Longmuir Moss. We were again fortunate to have fine weather for our excursion.

A short walk down a lane and along the south bank of the Mean Burn provided much of botanic interest before the party reached the Moss where most of the time was spent.

The main interest was in the species of sedge, willow and orchid. However, many other plants and birds of this type of habitat were also present and we were entertained to a display of Snipe drumming while we ate our picnic lunch. The return walk on the south side of the Moss was over grassland rich in Mountain Pansy and the day was rounded off by finding a hen Pheasant lying low in a tussock by the turn.

M. Clarkson

Burncleugh Centre, Eskdalemuir, Dumfriesshire — 30 June 1990

On a dreich June day, 16 members travelled by coach to the Economic Forestry Group's Burncleugh Centre at Eskdalemuir. As the rain was of the cats and dogs variety when we arrived, we gladly accepted the invitation by Mr. Ronald Rose, the Group's Wildlife Manager, to spend the rest of the forenoon in the warmth of the visitors' centre viewing his slides and hearing about the work done by him and his wildlife team in the 15,000 hectares owned by the Group. Three-quarters of this area is planted with a commercial crop of conifers — 80 per cent of which is Sitka Spruce. There are also sheep farms and a grouse moor within the bounds of Eskdalemuir.

After a very interesting and lively lecture, and lunch, we drove a few miles into the estate to see the results of some of the work done by the team.

Mr. Rose pointed out the broad rides left between the conifer plantations to allow the Roe Deer to graze. Their favourite food is good quality fescue and given an adequate grazing area they will not be tempted to browse on the conifers, which in any case come low down on their list of food preferences. Cotoneaster, Alder and Willow have been planted in strategic areas as rubbing and marking posts for the roe bucks — again saving damage to the commercial crop.

There is an annual cull of the Roe Deer, both bucks and does. Foxes, Mink and Carrion Crows are also strictly controlled.

Kestrels and owls are welcomed at Eskdalemuir as they feed on small mammals such as the Short-tailed Vole which can do severe damage to young trees by bark stripping. We saw some of the nest boxes erected for the Kestrels. They have proved popular with the birds, as have the artificial nests provided for the Long-eared and Tawny Owls.

Groups of broadleaved trees have been planted to attract the smaller birds and Mr. Rose explained that there had to be a minimum of 17 trees in such plantations to attract and support this bird-life.

Ponds have been dug in marshy areas. These not only attract wildlife (seven species of duck have been recorded) but also serve as reservoirs for fire control.

After Mr. Rose left us in mid-afternoon we only had half an hour to spare for a short stroll before heading back to Edinburgh; just time to note a few common moorland plants by the track.

Our bird count for the day included both Short-eared and Long-eared Owls, Kestrel and Hen Harrier, as well as Curlew, Skylark, Swallow, House Martin and Common Sandpiper, a fraction of the 117 species recorded at Eskdalemuir.

A Weasel was spotted but, alas, none of the thriving population of Red Squirrels in the area made an appearance.

D. Mack

Carberry Tower Arboretum, Whitecraig, East Lothian — 11 July 1990

On a fine, clear but chilly evening of Wednesday, 11 July, a group of members gathered in the Arboretum at Carberry Tower. The collection of trees at Carberry is a very interesting one containing both native and exotic species in a lovely setting and it is open to the public. As the trees are not labelled, visitors who hope to have maximum benefit should take a good tree book with them.

V. McFarland

Flotterstone, Penicuik, Midlothian — 18 July 1990

This was a very pleasant walk on a warm, sunny evening. Our route took us along the path by the Glencorse Burn, passed the fish farm and on to the road leading back to the visitors' centre.

Many plants were noted, ranging from the delicate Thyme-leaved Speedwell (*Veronica serpyllifolia*), Field Pansy (*Viola arvensis*) and Climbing Corydalis (*Corydalis claviculata*); to the sturdy, vigorous patches of Water-cress (*Nasturtium officinalis ag.*) and Monkeyflower (*Mimulus* sp.) which grew by the burn.

On the roadside verges, Tufted Vetch (*Vicia cracca*) grew in profusion and Dove's-foot Crane's-bill (*Geranium molle*) and Wall Lettuce (*Mycelis muralis*) were among others recorded in this area.

Our bird list for the evening was disappointingly short — Pied Wagtail, Yellowhammer, Wren and a rather dull Goldfinch were all we could muster.

D. Mack

Penmanshiel, Cockburnspath, Berwickshire — 28 July 1990

While the group was gathering in hot sunshine in the tidy new visitors' car park at the Pease Caravan Park, some members spotted two Dippers, adult and young, in the Pease Burn. Starting off on the route of the Southern Upland Way, we soon came to a patch of the very poisonous Hemlock Water-dropwort (*Oenanthe crocata*) and the bright yellow Monkeyflower (*Mimulus* sp.).

Tree-shade was welcome for the steep ascent of Pease Dean, but as we reached more open ground the breeze ensured that it was not painfully hot. The extensive south-facing hillside known as Aikieside was originally a great oak forest, owned in the 12th century by the monks of Coldingham; later it became a Royal hunting-ground, and in the 15th century provided charcoal for iron-smelting. The "Great Felling" of the oaks took place during the 1914-18 War, and the replanting on the rather poor greywacke-debris soil was with fir and larch. The present covering, under Fountain Forestry, is of trees only a few feet high, with heavy undercover of Bracken, Gorse and Broom. Huge old forest stumps are visible in many places, with the odd survivor of oak and birch upstanding, but very exposed, as landmarks. Throughout the walk, we were overlooking the wooded dean of the Upper Pease, through which runs the mainline railway and on the opposite slope of the valley, the A1 trunk-road, so we were never free of traffic noise on this busy holiday Saturday. But *our* track was on the very old road from the south which before the erection of Pease Bridge in 1786 had zig-zagged down the deanside to the ford where we had started the walk. The blaze of yellow from Gorse and Broom was long since over, but was now replaced by the yellow of Cat's-ear (*Hypochaeris radicata*) which grew abundantly at the sides and middle of the track. Honeysuckle and, a less familiar sighting, the Climbing Corydalis

(*Corydalis claviculata*) were plentiful along the banks, as were Brambles and some wild Raspberries.

Our lunch stop was in the welcome shade of Penmanshiel Woods and here we found Goldenrod (*Solidago virgaurea*) and the Giant Bellflower (*Campanula latifolia*). A Chiffchaff was singing, apparently accompanied by young. But persistent bird-calls from the deep valley below us, which we all agreed were from young Kestrels, could not be finally confirmed until much later in the afternoon when, from the Southern Upland Way path high on the hillside, we saw the Kestrel family flying in and out of the tree tops. Before this, we had a sighting of a pair of Buzzards over Coldingham Moor. Clumps of Bell Heather (*Erica cinerea*) provided splashes of colour up here, but the true heather or Ling (*Calluna vulgaris*) was not yet in flower. Descending into Pease Dean again, but this time on the new SWT path on the east bank, we found Enchanter's Nightshade (*Circaea lutetiana*) and the Soft Shield Fern (*Polystichum setiferum*) which is one of the rarities in this reserve. Then we branched off to a new and as yet rather rough path up the Tower Dean in order to admire an extensive patch of Giant Horsetail (*Equisetum telmateia*) in what is normally a "wet flush" in the woods but this year is almost completely dry. This striking plant, some about 5 feet high, is an almost unchanged survivor from the horsetails of the Carboniferous period, and was 'new' to several members of the party. Stepping-stones led us across Tower Burn, through an alder-lined valley to the confluence of the Tower and Pease Burns and so back to our starting point. Lepidoptera seen during the day included Meadow Brown, Ringlet, Green-veined White and Small Copper butterflies, and a Cream-wave Moth.

M. Watson

Soutra Aisle and Dere Street, Roxburghshire — 4 August 1990

We set off in a minibus to try to follow part of the line of the Roman road of Dere Street which ran from the Forth to York.

Starting on the A68 south of Dalkeith, the route turned off to Chesterhill, sighting Inveresk and Cramond from this high point, and on through Ford, regaining the A68 at the base of Soutra Hill where we reached Soutra Aisle and saw the Roman fort there.

Dr. Brian Moffatt who is conducting a dig in this area told how the monks of Melrose, Newbattle and Holyrood had utilised the Roman road. In fact it was the main mediaeval route into Scotland. Dr. Moffatt had found evidence of a large hospital, church and town on the site where the monks had practised medicine. Traces of anthrax and tetanus as well as pollen grains of Opium Poppy, Cannabis and Tormentil had been found in the mediaeval drains; also blood, as blood-letting was standard practice for illness.

Back on the A68 past Lauder we diverted to the long, straight stretch through Blainslie, almost to Trimontium. Then back to the A68 past St. Boswells to Forest Lodge, from where we walked on the road through fields in a straight line to the ford at Monteviot. The bottoming of the road is visible in many places in this section, and we saw the grave of Lilliard who fought in the Battle of Ancrum Moor in 1545 and lost both her legs, as recounted in the Border Ballad.

There were few birds except Pheasants and Partridges; flowers were gone to seed, but we did find a group of Betony plants (*Stachys officinalis*) flowering.

C. Stewart

Kinmonth Deer Park and Moncrieffe Hill, Bridge of Earn, Perthshire — 11 August 1990

The visit to Moncreiffe Hill was divided into two distinct parts. The eastern flank of the hill is privately owned and a park here contains a small herd of white deer which we were shown by the owner, Col. John Moncrieff, who has selected these animals from a herd of red deer. The path to the deer park had a good variety of plants which grow on the fringes of agricultural land and we were able to compare Hairy and Smooth Tare and Common and Musk Mallow.

The afternoon was warm and sunny and the party was glad of the shade of the trees for the walk up Moncrieffe Hill. Moncrieffe Hill Wood was acquired by the Woodland Trust in 1988 from the Forestry Commission and contains a number of broadleaved trees as well as plantations of conifers. The long-term objective is to create a mature pinewood on the crest of the ridge with native broadleaved woodland below, the lowest slopes continuing to be occupied by mixed 'policy' woods. The ancient earth fort at the top of the hill provided a splendid viewpoint.

Upland and woodland plants were seen but the bank by the car park was perhaps the most interesting and it had evidently been covered in Common Centaury earlier in the summer.

M. Clarkson

Dunbar Castle Coast Walk — 18 August 1990

It isn't often that an excursion contains as many different habitats as our walk from Dunbar Castle to the John Muir Country Park. Bare ground where the old barracks had stood was being colonised, then there was the castle wall itself, a man-made habitat, where Kittiwakes and Fulmars were nesting. We moved on to cliffs where House Martins also had nests and feral Rock Doves were seen. We descended to rocky shore which eventually became sandy shore as we neared Belhaven Bay. We skirted round the golf course and a picnic park, passed by saltmarsh and mud flats, coming to the sea wall behind which is fresh water at Seafield Pond, with surrounding willows, reed beds, a deep ditch and a wet meadow. The flora at both sides of the sea wall was particularly good in this area with one or two uncommon plants. The saltmarsh was purple with Sea Aster (*Aster tripolium*); there was Sea Wormwood (*Artemesia maritima*) and Sea-blite (*Sueda maritima*). At the pond itself we found Tall Melilot (*Melilotus altissima*), Hare's-foot Clover (*Trifolium arvense*), Strawberry Clover (*Trifolium fragiferum*), Foxtail Barley (*Hordeum jubatum*) and Bugloss (*Anchusa arvensis*).

We walked on to the Biel Water which flows into the bay, a favourite spot for anglers that day. Across the bridge was agricultural land enclosed by a protective stone wall. Walking on the seaward path we came to sand dunes at the east end of John Muir Country Park where we skirted the conifer plantation to examine the flora of a small (dried-out) pond before we finally came to a clearing in the pines where the lovely Grass of Parnassus (*Parnassia palustris*) and Autumn Gentian (*Gentiana amarella*) were in flower.

We found two 'woolly bears' in the grass, Fox Moth caterpillars. Earlier we had seen a Small Copper butterfly.

Terns were fishing close to the shore while the Gannets remained further out to sea. One Wheatear was observed on the rocks, where Turnstones, lovely in their summer tortoiseshell plumage, were busily feeding and calling to each other. Ringed Plovers were also present.

The botanical list was enormous. Crow Garlic (*Allium vineale*), Tansy (*Chrysanthemum vulgare*), Hoary Cress (*Cardaria draba*) and one plant of Duke of Argyle's Tea Tree (*Lycium barbarum*) were more uncommon recordings. Walking back from the Country Park area we found Lesser Meadow Rue (*Thalictrum minus*) and growing side by side for easy comparison were Weld (*Reseda luteola*) and Mignonette (*Reseda lutea*) with its distinctive pinnate leaves.

M. Robertson

Charlestown and Roscobie, Dunfermline, Fife — 25 August 1990

The excursion took the Society across the Forth to meet in the old pier car park at Limekilns in Fife. From the meeting point the group made its way up the road towards Charlestown village, turning off to enter Broomhall estate and visit the Gellet rock with its flagstaff mounted on top. The remnant knoll of the Gellet rock indicates the level at which limestone once stood in the area before the start of quarrying. As the party returned to the roadway through the estate, two orchid spikes of the Helleborine group were discovered, within a metre of the edge of the road. Unfortunately, the flowers had gone over and it was difficult to be certain of a more precise identification.

The party walked back through the model village of Charlestown, built between 1756 and 1758 by Charles, 5th Earl of Elgin, on our way passing the old granary, now the post office. We first visited the east quarry, just north of the village, where we examined many fine coral and brachiopod fossils associated with the Charlestown Main Limestone. Also in this quarry it was possible to get access to the black shales above the limestone and collect many examples of the stems of fossil sea lilies (Crinoids). Moving to the much larger west quarry, we had lunch, before looking at the entrances to the limestone mines which were the final phase of working at this quarry. When we consider that the quarries at Charlestown have been worked for two hundred years, and as far back as 1842 were producing 15,000 tons of raw stone annually, it explains the sheer scale of the workings.

Leaving the quarries we now made our way towards the limekilns down by the harbour passing on the way the remains of the old horse-drawn tramway. This tramway was built to move quarried limestone to the kilns. Initially laid with wooden rails, it was modernised in 1842 with steam engines and iron rails. Examining the area around the old limekilns we could admire the skill with which they had been built and also the scale of the operation. This is the biggest number of limekilns on one site in the whole of Scotland. Lime-loving plants such as Wild Carrot and Tansy were common in the herb-rich grasses around the top of the kilns.

Our last stop at Charlestown was the harbour, once a thriving export port for limestone and burnt lime; now it contains only a few small pleasure craft. From this busy harbour in 1848, Andrew Carnegie sailed to make his fortune in the New World.

A visit to another disused limestone quarry at Roscobie, 4 miles north of Dunfermline, was on the agenda for the afternoon. Quarrying on this site is first mentioned in the *History of Dunfermline* by A. Mercer dated 1828. At Roscobie fossils are even more abundant than at Charlestown and much of the time was passed in collecting Brachiopods, Crinoids, Corals and other treasures then discarding them for even finer specimens a few minutes later. In addition to fossils there is abundant small bird life at Roscobie, and in the flooded part of the quarry, we also saw great numbers of newts and small toads. Insect life including the Common Aeschna dragon fly, *Bombus lapidarius* bumble bees, and numerous butterflies, made sure that there was something for all interests. Indeed, so thick was the undergrowth, through which we had to struggle on our way up from the quarry bottom, that I should not have been overly surprised to glimpse the striped camouflage of a Tiger or the sinuous coils of a giant Python cross our path. A pleasant day with good weather and much to see ended at 5 pm with many members intending to come back to both sites for more detailed studies in the future.

W.J. Baird

Hope's Reservoir, Gifford, East Lothian — 1 September 1990

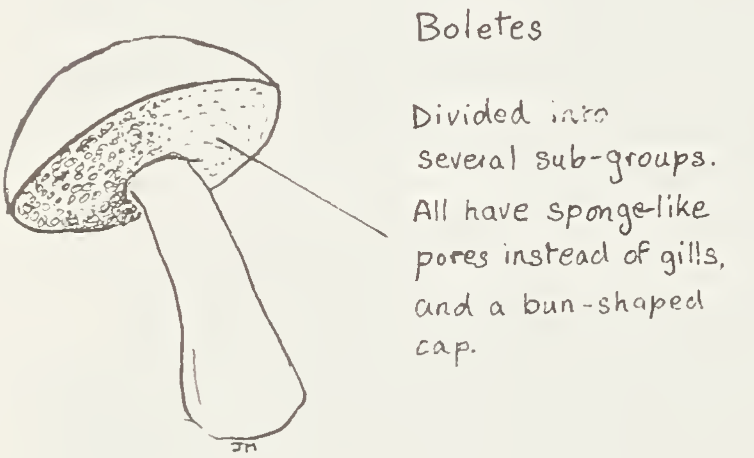
The fungus foray to the area around Hope's Reservoir was led by Roy Watling, and included a group of students as well as members of other interested societies. The dry summer experienced by the east of Scotland meant that conditions were less than ideal, and with the exception of one or two species, the fungi were not found in quantity. The area of unimproved pasture below the reservoir is known locally for Field Mushrooms and *Agaricus campestris* was duly recorded, as were a variety of Puffballs (*Bovista nigrescens, Calvatia utriformis, Lycoperdon foetidum* and *Vascellum depressum*) and some Wax-caps. A small colony of Musk (*Mimulus moschata*) in a wet patch produced great excitement among those interested in 'higher' plants (this is probably the only site in East Lothian).

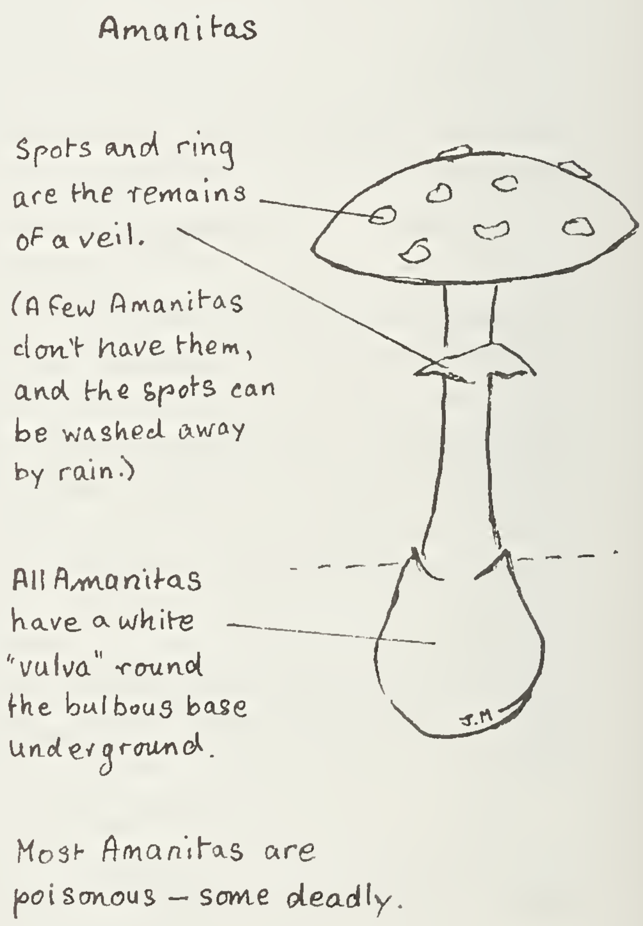
We ate lunch in pleasant sunshine on the slope below the dam, and were surprised to discover Stag's-horn Clubmoss (*Lycopodium clavatum*), a primitive fern-ally, outcropping here and there amid the heather.

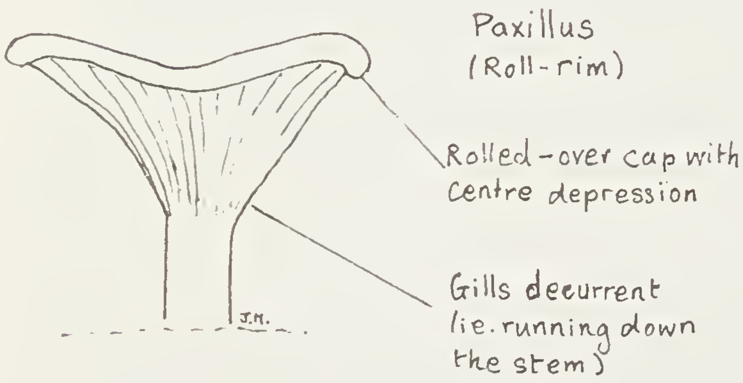
The scrub, mainly young Birch, in the valley below the reservoir proved the richest area. There were many *Psathyrella* of the *hydrophila* group and also *Leccinum scabrum*, the Brown Birch Bolete. As its name suggests, this fungus is particularly associated with Birch as is *Leccinum versipelle*, the Orange Birch Bolete which was also found, as was *L. rigidipes*. *L. rigidipes* has a rather pale cape and a stiff stipe which is slightly swollen at the base. This fungus was distinguished from *L. scabrum* by P.D. Orton.

Another interesting find was *Dermoloma cuneifolium.* This, too, is a fungus which has recently been distinguished. The genus is typified by the rather wrinkled cap and mealy smell.

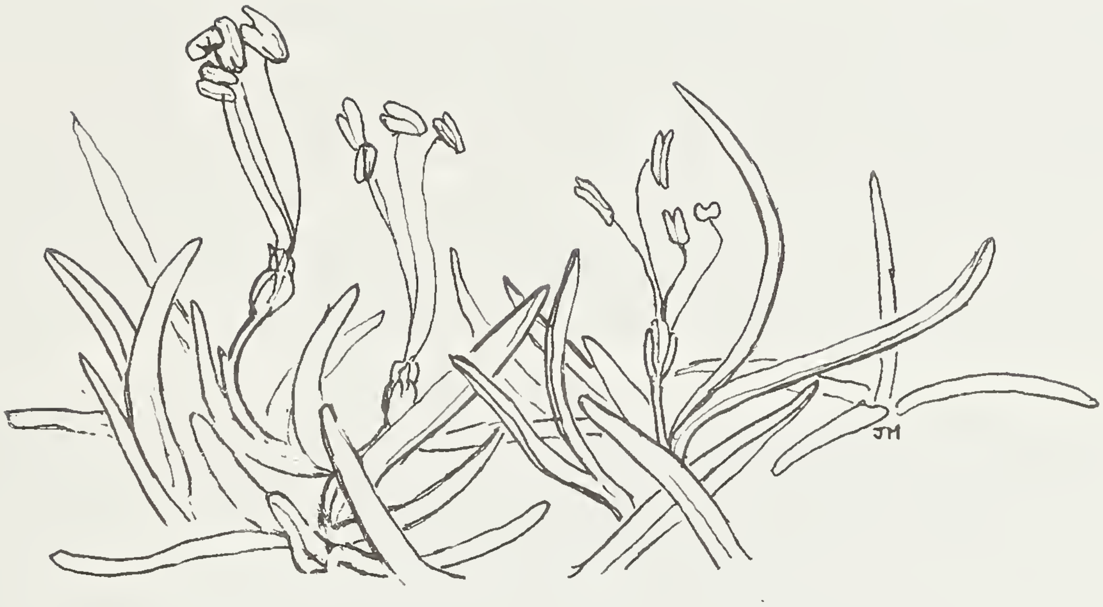
A more easily distinguished group is the *Amanitas. Amanita muscaria* (Fly Agaria) was present in the more mature birchwoods around the reservoir. This is the familiar red mushroom with white spots, which although poisonous appears in all the children's books. Most *Amanitas* have the white spots and a ring round the stipe (the remains of a veil) though these are not always obvious, and they all have a volva at the base of the stipe (stem). The attractive pink *Amanita rubescens* (the Blusher) was also found, as were two species of *Amanita crocea.* The latter is interesting as the ring is low down on the base of the stipe and almost concealed by the volva, so that it appears not to have one.







Other woodland fungi included *Paxillus involutus*, the Brown Roll-rim, which lives up to its name by having a brown cap, the edge of which is always inrolled. There was also an assortment of brightly-coloured *Russulas*, and some Milk-caps, which can be recognised by the milky fluid they exude when the gills are damaged. Peppery Milk-cap (*Lactarius piperatus*) was found amongst the general woodland, while the Rufous Milk-cap (*Lactarius rufus*) was found under Pines. A 'volunteer' was found to taste both these fungi. The observers were able to note the instantaneous response to *L. piperatus* as compared with the approximately one minute delay before the 'hotness' of *L. rufus* became evident.



Littorella uniflora

Some more Boletes were found in a small conifer plantation, both members of the *Suillus* family, which have sticky caps. *Suillus luteus* (Slippery Jack) was among Pines and *Suillus grevillei*, the Larch Bolete, as the name suggests, among larch.

J. Muscott, E.McA. Smith

A 'Higher Plants' appendix

The reservoir was very low, leaving several yards of gravel and mud which are normally under water. A number of flowering plants seem to be particularly adapted to this type of habitat, and suddenly appear during dry summers. Shore-weed (*Littorella uniflora*) is perfectly happy under water, and may remain there undetected until the water recedes. Then it flowers (not that the flower is immediately obvious among the grass-like herbage, the most conspicuous part being an inch-long filament bearing anthers). Marsh Cudweed (*Gnaphalium uliginosum*) and Marsh Yellowcress (*Rorippa palustris*) on the other hand are annuals whose seeds presumably lie dormant until the right conditions arise, and water gives way to wet mud. Then there is a sudden explosion, as in the desert after rain.

After noting quantities of the last three plants at Hopes, I made a quick trip to one of my *Botany of the Lothians* squares, around Whiteadder Reservoir, and there found even larger quantities on similar terrain. It's obviously important to visit sites under different weather conditions as well as at different times of year!

J. Muscott

Yarrowford — 8th September 1990

Sixteen people congregated at Yarrowford to follow the Minchmoor Road northwards, thereby completing the traverse of this ancient route from the valley of the Tweed to Ettrickdale begun at the same time last year at Traquair and walking south as far as the Cheese Well.

To begin with the path was steep and led through a strip of woodland containing several large beech trees with Buckler Fern growing at the roots of one. At the top of the incline a gate opened onto the moor. The first people through were in time to see a fox trotting along the side of a stone wall down in the valley of the Gruntly Burn. Next, a heron was seen following the course of the burn. Keeping the wall bordering the wood on our left, we followed the track which ran parallel with it. We passed Ash, Oak, Scots Pine and Douglas Fir with familiar flowers such as Tormentil, Germander Speedwell, Field Pansy, Common Orache, Autumn Hawkbit, Harebell, Eyebright, Self Heal and Yarrow in the grass on either side of the track. Also several fungi, such as Puffballs, Wax-caps and Dung Fungus were seen. As we gained height the grass gave way to heather, both *Calluna vulgaris* and *Erica cinerea* were in bloom. At a spring called Thirsty Katie we found damp-loving plants such as Quaking Grass (*Brisa media*), Devil's-bit Scabious (*Succisa pratensis*), Lady's Mantle (*Alchemilla vulgaris*) and Lesser Spearwort (*Ranunculus flammula*). Before reaching, but in sight of, the track to the Cheese Well, we turned east and onto the old Drove Road, now part of the Southern Upland Way which leads over the summit of the Brown Knowe, the Broomy Law and on to the Three Brethern. We stopped for lunch at a man-made rampart known as Wallace's Trench, here there was a lovely large clump of Moor Sedge (*Carex binervis*).

The Three Brethern are stone cairns, 3 metres high, erected side by side, where the three Properties of Selkirk Burgh, Yair and Philiphaugh meet in a terminus of fences. From the panoramic view several landmarks could be identified including the Eildons, Smailholm Tower, the Cheviot and the River Yarrow wending its way from the west.

We retraced our steps for about half a mile, then climbed over a stile and down through the heather to the Youth Hostel at Broadmeadows. Part of the River Yarrow flows through the grounds and the last part of our route was on a path, high above the water. When we reached the main road we had to walk on the tarmac road for only a few hundred yards in order to regain the village where we had parked our cars.

J. Lyburn

Bowhill, Selkirk — 22 September 1990

The fungus foray to the Bowhill Estate, near Selkirk, was a combined outing for the ENHS and the Botanical Society of Edinburgh, and the Peeblesshire branch of the Scottish Wildlife Trust, so not surprisingly there was a large turnout.

The party divided into two, and one group, led by Alan Bennell, made for the more hilly area which included some moorland, while a second group was led by Stewart Roberts through lower wooded ground.

Considering the long, hot, dry summer and the great lack of fungi over much of England, it was a pleasant surprise to find a good variety of species. There were no rarities, but several were additions to the list for the estate.

Car bonnets proved adequate for laying out specimens at the end of the foray when one had a chance to compare the finds which had been collected in the different habitats.

The weather was perfect, the grounds of the estate looked lovely, and everyone enjoyed themselves. We are most grateful to Stewart Roberts for organising the day and obtaining permission for us to foray on the estate, and to him and to Alan Bennell for leading the two groups.

E. Farquharson

John Muir Country Park, Tyninghame, East Lothian — 20 October 1990

Following a wet morning in Edinburgh, a group of eight, ably led by Bill Clunie, spent an enjoyable and rewarding day around the estuary of the Tyne at Tyninghame. Visibility was restricted by mist but it remained dry overhead with a mild southerly breeze.

In the woods near the car park, good sightings were had of Bramblings feeding on the ground with Chaffinches. Redwing and Red Squirrel were also seen in the trees.

On the sea marsh adjacent to Sandy Hirst we saw Grey Plover, Curlew, Redshank, Oystercatchers and Dunlin and a group of three Roe Deer. Overhead flew groups of Fieldfare, small groups of Mute Swans, a solitary Snipe and a couple of Short-eared Owls. On the water were noted Wigeon, Shelduck and Red-breasted Merganser.

On the rocky shore facing the sea we later had a good view of Greenshank feeding and by St. Baldred's Cradle we spotted Eider, Guillemot, Rock Pipit and Turnstone. Robins seemed out of place on the rocky foreshore as it was pounded by waves at high tide. In the adjacent trees were Long-tailed Tits and further up the coast a Grey Seal pup was lying some 8 yards above high water mark, apparently content with his situation and marks in the sand showed that he had got there under his own steam.

Some 46 bird species were recorded during the day.

D. Gill

Musselburgh and Aberlady — 17 November 1990

This outing seems to have become an 'institution' — members seem to regard it as a permanent fixture on the winter programme. I overhead some members comparing notes on how many lagoon outings they had been on!

Regardless of who the leader is it is certainly a very good outing and can easily stand being a regular event — I can think of no other outing where you not only see so many birds but see them so exceptionally well.

If the weather is right as it has been in recent years this outing cannot fail to interest members. This year all the usual species were observed with especially good views of Knot and other waders in flight. Snow Buntings were seen in flight at the lagoons and a good view was had of Merlin at Kilspindie.

C. Pountain

THE LIBRARY

There are now nearly 900 books in the Library covering many aspects of natural history from plants and animals to soil and geology. During the past year a number of books have been purchased or given to the Society[1], including a large bequest by Mr. Tom Prentice.

Most of the books, of both general and specialist interest, may be borrowed by members, though a few are available for reference only.

Unfortunately, we are no longer able to store books at Melville Street and all of them are now at the Society's room in Donaldson's School. I hope to bring a selection of books to Wednesday evening meetings so that members may have some idea of the wide range of our collection. Otherwise books may be seen at Study Evenings held at Donaldson's during the year. Any member who would like a book on a particular topic is welcome to contact me for further information.

I hope it will be possible in the future to produce a list of the books available. At the moment the borrowing rate is rather low, but if more members showed an interest in the books perhaps Library evenings could be held, when members could borrow books or have the opportunity to study the reference books.

Frances Dunn, Librarian

[1] New titles include:

M.R. Cooper & A.W. Johnson, *Poisonous Plants and Fungi.*

C.T. Ingold, *The Biology of Fungi.*

J. Muscott, *A Checklist of the Flowering Plants and Ferns of West Lothian.*

Naturalists' Handbooks, Vols 1-12; subjects include Dragonflies, Ladybirds, Aphids, Grasshoppers, Hoverflies, Wasps.

Third Report on the Researches into the Mediaeval Hospital at Soutra.

SOCIETY EQUIPMENT

In addition to books, the Society has various other items which can be borrowed by members for private use. Needless to say, members will be responsible for the care of equipment in their hands.

Telescope:	A Bushnell Spacemaster of 20-45 X magnification in carrying case, a mounting tripod in separate carrying case and a car window mount for in-car use. *Apply to Miss Molly Woolgar (Tel. 667 2688)*
Microscopes:	The Society has seven high-powered microscopes and three low-power stereo microscopes. *Apply to Mrs. Ena Gillespie (Tel. 332 3214)*
pH meter:	An instrument for measuring the acidity/alkalinity of soil or water. *Apply to Mrs. Ena Gillespie (Tel. 332 3214)*
Mammal traps:	24 small mammal traps. It is desirable that anyone using these should first obtain a trapping licence. *Apply to Mrs. Elizabeth Farquharson (Tel. 447 1994)*
Photographic slides:	A comprehensive slide collection was left to the Society by Miss Janet Raeburn. These are mostly botanical subjects but also include birds, mammals, butterflies and Scottish scenery. These slides are kept with the Library.
Bawsinch key:	The Bawsinch Nature Reserve at Duddingston is managed by the Scottish Wildlife Trust. They allow our Society to hold a key, to allow members entry to the hide overlooking Duddingston Loch. *Apply to Mr. Duncan Gill (Tel. 667 2427)*

PUBLICITY

This year the Society aimed to make itself more widely known by bringing its activities to the notice of more people. So often in the past, new members have expressed a wish that they had known previously of the Society's existence.

In April a small stand was held at the Scottish College of Agriculture's Open Day at Boghall Farm, Biggar Road, Edinburgh.

From April through to September the Society's principal display was held in the Exhibition Hall at the Royal Botanic Garden. This was manned by members during the period of the Edinburgh Science Festival in April. In addition to photographs depicting the activities and interests of the Society, there was a life-size model of a 'typical' member and an educational game board which proved attractive to children of all ages.

Another display was placed in the foyer of the Commonwealth Pool and subsequently in the Edinburgh City Libraries at Morningside, Dundee Street, Stockbridge, McDonald Road, Leith, Newington, Craigmillar and Portobello.

A further display was staged in the Edinburgh Rooms at the Central Library at the end of November.

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THE
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JOURNAL

— 1991 —

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NOTES TO CONTRIBUTORS

It would ease production of the Journal if contributors would adopt as many as possible of these guidelines:

- type or write clearly on one side of paper
- use A4 size paper
- leave alternate lines blank for editing
- leave one clear margin
- give English name of subject followed by Latin name
- identify location of excursions by place names or OS map reference.

EDITORIAL

During the year, Duncan and Barbara Gill have moved from Edinburgh to Hutton in the Borders, and have consequently relinquished their positions as Journal Editor and Treasurer, respectively. We would like to thank them for their contribution to the Society over the years. John Winham and Jim Stewart have become the new incumbents.

The Society has decided to purchase a small computer and printer. These will be used in the future production of the Journal. A database will be maintained for club biological records, the library and club membership lists. Various facilities will be available, including word processing.

Last year's introduction of study evenings at Donaldson's School continued this year, covering basic botany, grasses, fungi and twigs in winter.

A record number of excursion reports have been submitted for inclusion in the Journal and the Committee wish to thank all contributors. The Excursion Committee have done another brilliant job, providing a varied programme of outings and should be remembered in your prayers!

OBITUARIES

Miss E. Leighton Bell

Members will be sorry to learn of the death, in her 90th year, of Miss E. Leighton Bell. Elsie had been a member of the Society for over 40 years and was a keen student of natural history all her life. Her particular interest was ornithology, which she pursued not only in this country but also in Europe, Canada and the Middle East. Her enthusiasm brought her on the Society's meetings and excursions into her late seventies when, despite failing health, she displayed a toughness and tenacity almost unknown to the present generation.

Mr. Robin Frame

We regret to record the death, in November, of Robin Frame. Robin joined the Society in 1970 and served on the Council. He was a chief engineer with ICI and took early retirement to further his interests in travelling and mountaineering. He had travelled all over the world, including Nepal, New Zealand, North and South America, Africa and, of course, extensively in Europe. Robin enjoyed music and regularly attended RSO concerts. He was also interested in archaeology and was an amateur artist.

He knew the countryside and hills of Scotland well, and also Wales and Devon where he led the Holiday Fellowship; but his great love was climbing mountains, which included an ascent of the Matterhorn.

WINTER INDOOR MEETINGS – 1991

January: The speaker for the first meeting of 1991 was Dr. Crinan Alexander, a plant taxonomist at the Royal Botanic Garden, whose illustrated talk was entitled "What's in a name". He explained the mysteries of the botanical system of nomenclature, dating back to Linnaeus in the 18th century.

February: Dr. Douglas Peacock, a geologist working for Heriot-Watt University, gave a talk illustrated with slides, entitled "Climate changes since the last Ice Age".

The period covered was about 18,000 years, the time which had elapsed since the last major glaciation in Britain. He explained the techniques – such as analysis of marine sediments, pollen analysis, ice core analysis, etc. – the correlation of which could give broad generalisations of climatic change.

March: The speaker of the evening was Mr. Eric Baird, the ranger for the Glentanar Reserve on Deeside. This talk had been arranged in conjunction with a planned visit to the Reserve during an ENHS weekend in June.

Mr. Baird discussed the problems concerning the countryside and reserve management, with particular reference to Glentanar, where the various needs of an estate with forest, farm and hill land have to be reconciled.

April: Members' Night. Five members had been persuaded to give illustrated mini-talks:

Margaret Mitchell started the ball rolling with, appropriately, slides of spring flowers. Next, *John Winham* covered the (very basic) basics of lichen structure, habit and identification. He was followed by Margaret Little explaining 'Wool aliens' with particular regard to the Gala Water and her back garden. For the substance of her talk, see the article in this issue, by Margaret, entitled "Wool aliens, adventives and shoddy".

After the interval, *Jackie Muscott* showed slides of the ENHS trip to the Norfolk Broads in May 1990.

Finally, *Duncan Gill* introduced the photographs submitted for The Gunn Competition. There were 26 entries in four categories, judged by Sidney Clarke of the Royal Botanic Garden. For winners and prints see the 1990 Journal.

October: Following the Annual General Meeting, Mrs. Betty Smith gave a detailed account, illustrated by slides, of all the dragonflies and damselflies breeding in Scotland. Betty included details of mating and egg-laying, with useful hints on identification.

November: Dr. Bailey-Watts, a freshwater biologist, addressed the Society on "The Coldingham Loch experiment".

A heavy algal bloom, looking like grass clippings, occurred at Coldingham Loch and was spoiling the fishing. Careful study revealed that due to stratification, little mixing of the water layers was occurring. In consequence of this, the bottom layers of water became oxygen deficient allowing the release of phosphorus from the loch sediments which supported the excessive algal growth. Compressed air was piped into the middle of the loch to mix the water layers and, in consequence, the quantity of the alga was reduced dramatically.

December: Unfortunately, Dr. Richard Tipping, our lecturer for the evening, was unable to be with us. We would like to thank John Campbell, one of our members, who stepped into the breach at short notice. He showed a marvellous selection of slides in four groupings: Morning, Nature's Way, Highland Clearance and Autumn. All were accompanied by music.

THE GUNN PHOTOGRAPHIC COMPETITION 1991

This year the competition attracted 18 entries submitted by six photographs. Once again we have four separate sections for flora, fauna, landscape and humour, and entries were equally split between these categories. We are indebted to Mr. Sandy Cleland for judging the competition.

Winning entries were:

• Flora	Jackie Muscott	*Spring Carpet, Crosswort and Stitchwort*
• Fauna	Iris Crosbie	*Gannets, Bass Rock*
• Landscape	John Campbell	*Affric*
• Humour	John Campbell	*Damned Roadhogs*

At the January 1992 ENHS Committee Meeting, it was decided to discontinue reproduction of the winning entries in the Journal, due to cost and the fact that black and white printing does not do justice to colour photographs.

It was also decided that, due to a falling off of interest (and entries), The Gunn Photographic Competition would be suspended. If more interest is shown at a later date, then it could be reinstated.

FARMING AND ITS RESPONSE TO WILDLIFE CONSERVATION

In the 1960s, a farmer would have understood conservation to mean the conversion of grass into winter feed. If nature conservation was thought of at all, it was regarded as a minority interest left to academics, research institutes and relatively harmless specialist groups. Little did we know then that the issue of wildlife and the countryside was about to explode, to fire an extraordinary, fast developing, emotional and often furious debate in which farmers found themselves to be one of the main casualties.

Farmers, for so long recognised as the custodians and stewards of the countryside, had, until the 1960s, been doing what they do best without criticism – producing high quality food, efficiently and cheaply. This was the response to the positive encouragement from Government, in both policy and financial incentives and, apparently, it was fully supported by the consumer. The centre-piece of the debate which was to challenge all this was the appraisal of the cost to the countryside of agricultural production during the post-war period. With it came the appearance of the "conservation lobby" blazing away and winning enormous public support, and in due course political sympathy.

If, as it is said, only well-fed nations can indulge in such things as nature conservation, then the British farmer had shot himself in the foot through no fault of his own. Perhaps this is so, but the responsibility for what has happened is actually borne by many.

As a consequence of the policies of Government to promote food production, it is a fact that many changes have taken place in the countryside since the outbreak of the Second World War in 1939. The war ended a period of severe decline in the agricultural industry, but with the prospect of food sources from abroad being cut off, the war effort saw much land going under the plough for the first time in decades. After the war, the policy for self-sufficiency continued and it has been in the wake of progress and technical advances that significant damage has been done to both the character and quality of rural areas. The statistics are there if anyone wishes to challenge them. However, those who have lived in the countryside for most of their lives have only to think back on the changes on their own door step to remember features that have been swept away or radically altered. If this was progress, then accompanying it was a loss of wildlife and all that that has meant in terms of its scientific, educational, cultural and social value.

In the 1970s few farmers would have understood the term "habitat". Now it sits alongside quota, set-aside and GATT as part of the farming vocabulary. This has been because much of the debate has centred on the habitat of wildlife and the damage done to it by farming practices. In the south, the loss of hedgerows became a major issue. In Scotland this was much less, but nevertheless amongst other losses recorded here, broad-leaved woods have been cleared, ponds infilled and wet lands drained. By now the list is well known. The debate has also been directed to the lack of management of habitat and the gradual and inevitable ageing, death and loss of trees – all largely inherited from the 18th and early 19th centuries, when considerable investment was made by the land improvers to repair the landscape degradation caused by farming practices before the 1600s.

More recently, the debate has been extended right through farming practices to include fertilisers and chemicals, and their effect on the environment, food chains and wildlife quality. The arguments have become more sophisticated with the greater awareness of all things environmental.

This apart, in recent times, habitats and thus the rural landscape have been altered, damaged or destroyed to such an extent that wildlife values are now a fraction of what they were before the war. It was on all this that the debate originally centred, concentrating on the negative but factual aspects of the issue, until it was appreciated by some that a positive outcome had to arise. There was after all, an opportunity to repair the damage, to recreate and to manage positively what was still there.

It was from this that twenty-one years ago the Farming and Wildlife Advisory Group (FWAG)[1] was born, as an independent body to bridge the gap between farmer and conservationist. In many ways this began to move the issue into a new phase. With the appointment of FFWAG advisers, guidance was to be offered to farmers who wished to incorporate wildlife conservation within their regular farm practices. In addition, the interpretation of the problems and solutions was a major objective of FFWAG with its encouragement of the link between the "green" with the "horn and the corn". A partnership had to be forged.

To a degree, this was a means by which farmers could respond to the criticism – to do something positive to improve their public image. More importantly, it provided the better understanding of the place that could be created or maintained for wildlife in a landscape moulded for intensive food production by the 1980s. If the need for image-mending is put to one side, it is quite evident that the debate in these early years had made farmers more aware of the issue and for a variety of reasons, many began to put back into the countryside something that the industry had taken away.

While slow at the outset, the sympathy of farmers has increased and if challenged, many will announce contributions to conservation to a lesser or greater degree. Not all, of course, but then years of having been taught to produce food efficiently and cheaply, whether through college training, by the college adviser, or in response to Government policy, make it difficult to change direction suddenly. This is perhaps particularly so, since conservation and its integration with farming, has not been part of the education syllabus or adviser's remit until very recently.

The subject, however, now seems to have moved into a third phase, and indeed a fourth one is perhaps already on the horizon. As agriculture is subjected to radical influences of economic re-adjustment, so it seems that wildlife conservation begins to sit more easily in the farming practice. In fact, it begins to show itself with certain financial benefits, particularly if the policy of nurturing the countryside, while stemming over-production, is one which the European

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[1] In Scotland an "F" for forestry was introduced to create FFWAG.

Council is to apply rigidly. How this will develop is unclear, but when it does, the fourth phase of this scenario will be upon us.

The term "nature conservation" still brings with it a very nervous reaction. Even in the proposed amalgamation of the Countryside Commission for Scotland and Nature Conservancy Council in 1992, the term has been deliberately avoided in the naming of the "Scottish Natural Heritage" agency, no doubt because of the emotional response it brings. Unfortunately, nature conservation is often confused with preservation or fossilisation, but this need not be so. The countryside must continue to support farming as well as wildlife; what is needed is more wisdom and sympathy in integrating the two. A better balance will entail some change in attitude and certainly more environmental awareness through advice and experience. What has been most seriously lacking has been the integrated teaching of conservation and farming practice. It is a fault which goes back through several generations and is only now being corrected.

With that realised, there are aspects of wildlife conservation which can now be seen to have a purpose beyond that of habitat and species protection and this is where education is particularly important. Conservation can make a real contribution to the amenity value of the farm. It can have a sporting potential and value. It can create an opportunity for diversification, and even contribute to extensification[2]. In fact today the trend to more environmentally friendly practices on the farm is a positive contribution to wildlife conservation and one which is hand-in-hand with farming in the 1990s. A great deal has happened since the 1970s.

Conservation is no longer a subject for the lobbying few – it has a place and role to play on the farm and estate. For some farmers, conservation was practised as a matter of course, without all the hype. For others, it is a case of redeeming the balance. Whereas in the 1970s it was an issue of conflict, the whole matter has been turned on its head. Now conservation may well be a means to an economic as well as a cultural end.

The 18th and 19th centuries saw great changes as estate owners planned and constructed landscapes in the windswept and open countryside inherited from the exploitation of previous centuries. The benefit of that investment is still with us, although much has been lost and the rest is ageing fast. The opportunities to manage, build on and enhance the foresight and vision of landowners of previous centuries have to be taken up.

Circumstances have changed remarkably over the last 30 years and undoubtedly not only does society expect these opportunities to be taken up by farmers, but we are now beginning to see that it is prepared to set up new mechanisms to encourage and finance them.

Conservation is the responsibility of all. In today's economic climate farmers cannot be expected to carry the full burden themselves. A partnership which involves the private, voluntary and public sectors, advisers, teachers and training agencies, has to be created to meet the demands of both environmentally friendly farming practices and the sympathetic management and enhancement of the countryside. This is one of the primary objectives of FFWAG.

The role of FFWAG is to provide advice which is freely available to farmers, is specific to their needs, and is given in such a way as to break down the pretentious mysteries of what wildlife conservation is about.

In 1990 the partnership between all of the local authorities in Lothian, the Countryside Commission for Scotland, and Lothian FFWAG, committed funds for the appointment of an adviser for the region for an initial three-year period. The adviser, Jeremy Roberts, is now well established in the role of promoting wildlife conservation to farmers. He gives practical guidance, advice and interpretation on all wildlife matters on farms. This is supported by training courses and group visits such as a highly successful "bat watch" held in the summer on an East Lothian farm.

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[2] Extensification is the opposite of intensification with respect to farming practice. It is associated with "set-aside" (see next article).

As the agricultural economy is forced to change, the benefits for wildlife must be grasped but it is FFWAG's role to ensure that this can be maximised in a sympathetic and sensitive way.

Dr. John Sheldon
(Regional Ecologist,
Lothian Regional Council)

SET-ASIDE

Set-aside is a word that is being increasingly heard these days in farming and conservation circles. For example, see Dr. Sheldon's article in this issue. Why am I interested, you may ask? Well, last summer, Ferranti dispensed with my valuable services and, consequently, I became a temporary employee of the Scottish College of Agriculture, whose job was to record the plants appearing on the set-aside areas of 18 selected Scottish farms.

So, what is set-aside? Most people have heard of butter mountains and wine lakes; now we also have cereal mountains. Set-aside is a European Commission, five-year scheme, which came into operation in the UK in July 1988, and is designed to reduce over-production of arable crops, particularly cereals. In return for taking at least 20% of eligible arable land on a farm out of production, annual compensation payments of up to £80 per acre are available. The land can be "fallowed" either on an annual rotation (rotational set-aside) or "permanently" for five years (permanent set-aside). This "fallowed" land has to be managed within defined conditions which include a requirement to establish or allow natural regeneration of green plant cover. No fertilisers or pesticides can be used, though herbicides may be permitted.

This scheme offers farmers new opportunities to use their set-aside land, not only to establish or expand non-agricultural enterprises on their farms but also to conserve and enhance the environment and promote wildlife conservation. These aims sound very laudable, but because the scheme as presently envisaged is only for five years, a farmer could expend his hard-earned cash to turn his set-aside land into, say, a nature reserve, only to discover that at the end of the five-year period, cereal growing is all the rage again and it is in his financial interest to return to arable cropping. So, what is best for the farmer who does not intend to turn his farm into a Disneyworld or picnic area? The Scottish Agricultural College maintains experimental plots where different management regimes are followed, from "natural regeneration" to the use of various sown mixtures. Study of these plots suggests that if a farmer wants to keep his options open, a grass/clover mixture is best on permanent set-aside. But this can represent a considerable financial outlay and, obviously, the farmer is out to maximise his return on the set-aside. Consequently, on the farms I visited, every variation was seen, from vistas of nodding grassland to impenetrable thickets of spear-thistle. One estate had sown a fescue/clover mixture and built a three-day eventing cross-country course, with jumps, on top of it – obviously a case of "horses for courses".

Of course, what was attractive to the botanist was anathema to the farmer, and *vice-versa*. The well managed grass/clover prairies were almost devoid of any botanical interest, but were a lovesome sight to the farmer, whereas the considerable species diversity of some of the "natural regeneration" areas, i.e. weeds, brought tears to his eyes, offset no doubt by the satisfying bulge of his wallet.

Another consideration of going into set-aside for a farmer, is the concomitant reduction in his staff. If a whole farm is put into set-aside and mown once a year, then no staff or equipment is required. The farm can be mown by a contractor.

From the botanical point of view, some interesting species were seen: Field Madder (*Sherardia arvensis*), Birdsfoot (*Ornithopus perpusillus*) and *Amsinckia* sp. were not uncommon on some farms. These plants are rare in Scotland, whilst Cowbane (*Cicuta virosa*), found just outwith a set-aside area, is on the Scarce Plant List for the UK as a whole. Another plant, common in the Lothians but not in Perthshire, was Goat's-beard (*Tragopogon pratensis*).

Of particular interest was a "natural regeneration" field on a farm near Brechin, where acid moorland species, such as Matgrass (*Nardus stricta*), Green-ribbed Sedge (*Carex binervis*) and Lousewort (*Pedicularis sylvatica*) had become established on land that had been cropping cereals until three years ago. it is an interesting speculation as to whether the seeds had been dormant in the soil (seedbank), unable to germinate due to a high pH, induced by fertilisers, or that the plants were colonising from elsewhere now that the soil conditions were more acid. It was a hill farm.

John Winham

Reference

Guidance on Set-Aside. Edinburgh: Department of Agriculture and Fisheries, 1988.

SUMMER RANGER ON LAWERS

When I was offered the job of summer ranger on the Ben Lawers National Nature Reserve, I had a vision of tramping over the hills in shorts and singlet from dawn (well not quite dawn perhaps) to dusk through the long, hot summer days, with a deepening tan and a deepening knowledge of the alpine flora. I knew it wasn't going to be quite like that, and indeed had a very long wait for the perfect day.

I moved to Killin in early June, nursing a slightly strained knee, the result of tramping up and down hundreds of Edinburgh tenement stairs collecting census returns. A support bandage is no ornament, but I did not have to worry about my image, swathed as I was in layers of wind- and waterproofs for weeks to come. Indeed, the main problem was to get up the hills on a day dry enough to be able to work properly.

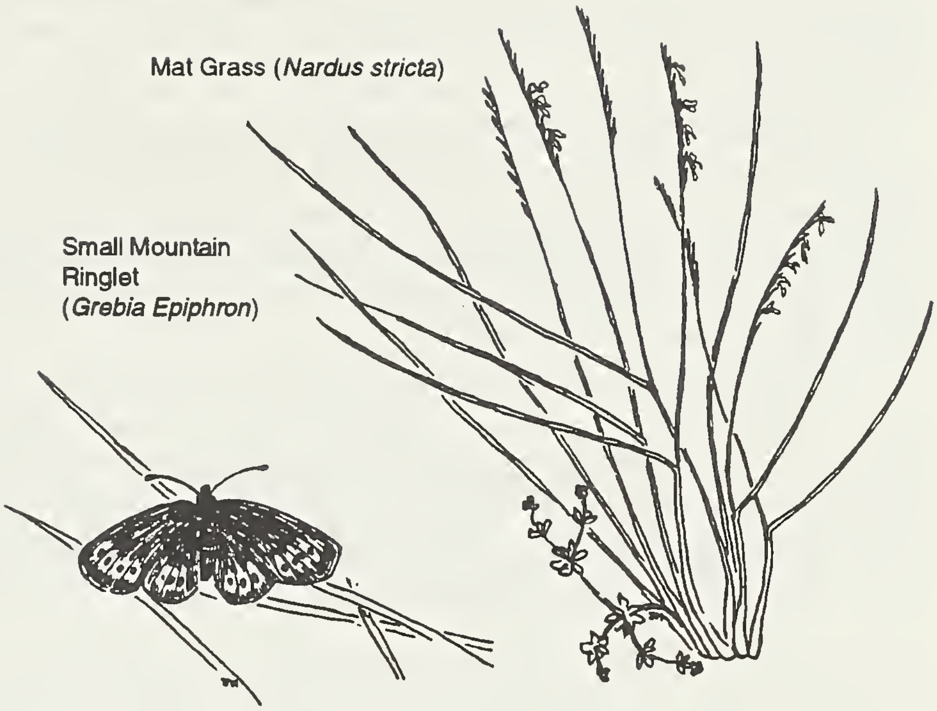
My job was to monitor the vegetation in an exclosure set up two years ago, high on the hillside between Meall Greigh and Meall Garbh, the two most easterly mountains of the Lawers Range. The fenced area covers about five hectares (12–13 acres) of land and includes a river in a gorge and some quite rich cliffs to which a few alpine willows still cling. It lies at a height of 700–800 metres (2,500 feet) and faces south, nicely catching the prevailing wind as it funnels up the bealach between the two hills.

More recently an even bigger area was fenced off lower down, near the visitor centre, an area which includes the entire nature trail and a considerable stretch beyond it.

The aim of these exclosures is to maintain and restore willow scrub and its associated flora, which has suffered as a result of 200 years of sheep grazing. Throughout the Highlands, the rarest alpine willows are now only found in very small numbers on the sides of steep cliffs and ravines which sheep and deer cannot reach, and many of the surviving colonies are too small and too isolated to reproduce properly, even if grazing were to be removed. (These sad remnants have been described by some observers as the "living dead".)

David Mardon, the warden at Ben Lawers, has been concerned about this problem for years, and has finally obtained funds to put up fences, and indeed to replant, in an attempt to reverse this trend. Both the National Trust for Scotland, who own Lawers, and the Nature Conservancy Council for Scotland are supporting this endeavour.

There is no doubt that the main aim of these exclosures will be realised, and that willows and other scrub, once re-established, will thrive. But the effect on other vegetation is not well understood, which is why proper monitoring is essential over the next decade or so. The dominant vegetation over the area as a whole is Mat Grass (*Nardus stricta*), a coarse grass, which is encouraged by grazing, since the sheep dislike it. But there is no guarantee it will disappear with the sheep; it may now be so well established that it can maintain or even increase its present level. And the untrammelled spread of long, coarse grasses will certainly affect some of the alpine species. We need to know which can compete and which cannot.


Mat Grass (*Nardus stricta*)
Small Mountain Ringlet (*Grebia Epiphron*)

It is much too early to say anything about the long-term trends in "my" exclosure — except that the grass is a lot longer than it was two years ago, and likely to stay that way! In the short term there were some very positive trends, like the appearance of large patches of the beautiful Mountain Pansy (*Viola lutea*) which did not even get on to the plant list when the area was first surveyed. What we don't know is whether the Mat Grass will eventually swamp the Mountain Pansy, which has obviously been present for many years, even if sheep prevented it from flowering. One or two seedling Birch (*Betula* sp.) and Rowan (*Sorbus aucuparia*) have also appeared, and it will be interesting to see how they progress, given the exposed nature of the site and the fact that it is above the accepted tree-line.

There are three species of scrub Willow in the exclosure, but only one — the Dark-leaved Willow (now *Salix myrsinifolia*, formerly *S. nigricans*) — had a viable population with both male and female plants present. A number of seedlings of this species have already appeared, which is most encouraging. However, it seemed most unlikely that the other two Willow species would ever set seed. There were only two specimens of Downy Willow (*Salix lapponum*) and one of Mountain Willow (*Salix arbuscula*), incidentally at its most easterly known site. All three are female, and there are no male plants in the vicinity. (Willows are single-sex and insect-pollinated.)

For that reason, there was a grand planting session in the middle of my stay, and about 1,000 seedlings were planted by the resident rangers and a group of volunteers. All the new Willows are of the three species mentioned above, and all were grown from local seed, some of the *Salix myrsinifolia* seed coming from the exclosure itself.

We don't know how many of these seedlings will survive, or what effect they will have on the other plants — another reason for long-term monitoring. The chief enemies of the young trees are likely to be the weather, disease (there is evidence of rust), and Voles, the latter being the only grazing animals left in the exclosure.

I saw Voles on a couple of occasions and was impressed by the patches of winter damage they cause. The little animals survive under the snow, and graze vegetation down to ground level near their runs. Other mammals present included some high-level Moles, and on my penultimate visit I spent a very enjoyable ten minutes watching the antics of a Weasel. (I wondered whether he was trying to "charm" me, perhaps seeing in me a whole winter's supply of good dinners.)

A Ring Ouzel nested in a rock crevice on one of the little cliffs, and complained so bitterly whenever I visited that I was quite relieved when the young fledged and the family decamped. Dippers were present in the stream and Meadow Pipits in the grass. Red Grouse came in from time to time, and I regularly met Curlew and Wheatear, and once a Grey Wagtail on my way up the hill. On my last visit a flock of Siskin were feeding on the seeds of Hardhead (*Centaurea nigra*) low down.

Butterflies were in rather short supply so high up, apart from the Mountain Ringlet (*Erebia epiphron*), a high-level butterfly which lays its eggs on Mat Grass. It spent a pretty miserable time during most of July skulking in the damp grass, and only occasionally getting enough sunshine to fly. By contrast, there were quite a lot of moths, of which I only managed to identify two, the Red Carpet (*Xanthorhoe munitata*) which lays on Lady's Mantle (*Alchemilla*) and the spectacular Wood Tiger (*Parasemia plantaginis*).

The weather did improve at last of course – in August – by which time I had reached the stage of feeding data into the computer and writing my report, rather than running up and down the hill. I did get my perfect day, however, shortly before I left – the Day of the Weasel – windless, sunny, tasks largely complete, but one or two botanical surprises still in store, not to mention the large, warm Blaeberries (*Vaccinium myrtillus*) nestling against south-facing rocks.

Now all I have to do is finish that report.

Jackie Muscott

A DAY OUT ON THE M.V. GARDYLOO

This year's trip, as guests of Edinburgh District Council, took place on Wednesday, 10th April, a day of strongish winds with a forecast of wet conditions in the afternoon. The ten members of the Society and one guest from the SOC who turned up at the Edinburgh Dock at 0745 hours had judged from the weather pattern of the two previous days that life afloat might just be a bit dodgy. As it turned out, however, the winds (which occasionally peaked at force nine according to the Captain) had very little effect on the sea conditions, blowing as they did from west or south-west, and the rain never came. In fact the day brightened as it went on and by taking positions on the sheltered side of the vessel conditions for bird watching were almost ideal. Given the time of year, hopes for exciting species had to be low but, as someone observed, "You never know what might turn up", so we assembled on the deck ready for casting off, wondering if the presence of an early Common Sandpiper in the dock area was an omen.

Moving through the docks to the exit lock some of the party saw a Cormorant with traces of the continental variety about its head and on leaving the lock another summer visitor, a Sandwich Tern, was seen resting on a buoy. Very soon after entering open water we were called below deck for breakfast, the first of three occasions when we were served with excellent food, well presented with good humoured efficiency by our steward for the day. Lunch was taken at mid-trip when the vessel was figure-eighting as she dumped her cargo and took on water ballast. And later, as we sailed pleasantly up the Forth past Gullane and Aberlady, tea and biscuits were at hand to fill up any gaps that had developed in the afternoon.

But of course if wasn't all sitting around stuffing the inner "person"! On the outward journey the captain took us, in his own words, "within throwing distance" of both Craigleith and the Bass Rock. That manoeuvre provided some of the most exciting sightings of the day, masses of sea birds on land, on water and in the air. Puffins, Guillemots, Razorbills and, above all, Gannets, flocked about us as we sailed east by south to the dumping point some ten miles off St. Abbs. Whenever one scanned the seascape the vista was one of constantly moving birdlife, with Gannets the main component. Variety was added by the apparently effortless yet majestic flight of Fulmars, in comparison with the scurrying wing beats of the Auks. Searching for rarities, or at least uncommon species, proved rather fruitless, with only a single sighting of a Manx Shearwater. The search wasn't helped by the fact that one of the officers diverted the attention of all but the most dedicated by providing an impromptu illustrated lecture on the operation and use of seaborne radar.

During the day, when within a mile or two of dry land, we witnessed a fairly constant flow of Pipits, in small groups of up to six or so, moving, it seemed, parallel to the coastline and in a westerly direction. The general agreement, after some serious and learned discussion of these observations, was that this was a case of migration in action.

Back in dock at about 1700 hours further general agreement confirmed that the trip had been enjoyable and refreshing, despite the nature of the real mission.

Jim Stewart

HIGHLIGHTS OF A WEEK'S FORAYING

The Death Cap (*Amanita phalloides*), Britain's most deadly poisonous fungus is not usually to be found in Scotland.

However, we found magnificent specimens of both Death Cap and Panther Cap at Killiecrankie Nature Reserve in early September during a fungus course. The course, which I attended, along with Mary Clarkson, was based at Kindrogan Field Centre and tutored by Dr. Alan Silverside. Dr. Silverside suggested that the appearance of these fungi was due to the exceptionally warm spell during August. We also saw *Amanita vaginata* and *Amanita citrina*.

Another unexpected find was the Old Man of the Woods (*Strobilomyces floccopus*), a large fungus covered in dark flecks and a grey pubescence which accounts for its common name. This species is rare in Britain and has a very limited distribution. Its appearance was probably also due to the warm spell.

The Amanitas are mycorrhizal fungi, that means the fungal mycelium has a close association with tree roots. The mycelium extracts phosphates from the substrate and passes it to the tree and sugar is passed from the tree to the fungus. Many of the larger genera are mycorrhizal such as Russula, Lactarius, Inocybe, Cortinarius and the Boletes. Some species are specific to the tree with which they associate. This can be very useful when identifying fungi, for example, a red-capped Russula with white gills and stem growing under beech is most likely to be *Russula mairei* and a similar fungus under pine would be *Russula emetica*.

During the week, because of the dry weather, the mycorrhizal species were the most abundant. The fungi we met with on the course fell broadly into four groups – mycorrhizal, litter decomposers, wood decomposers and parasites.

The beautiful Porcelain Fungus (*Oudemansiella mucida*) is parasitic on beech and the Beefsteak Fungus (*Fistulina hepatica*) was seen growing on oak trees.

We spent a delightful day wandering through the glorious Black Wood of Rannoch where we were able to examine and compare about 15 species of Russula, seven species of Lactarius and eight of the Boletes. It was explained to us that very often, *Gomphidius roseus*, a red-topped fungus with whitish decurrent gills, grows along with *Suillus bovinus* and, sure enough, for a considerable distance along the pathway there was a great number of *S. bovinus* with, tucked in amongst them here and there, *G. roseus*. We saw the Miller (*Clitopilus prunulus*), so called because of the nice mealy smell.

We went to the top of the Cairnwell to search for some of the montane species, but we climbed by the easy method – chairlift.

At the top of the chairlift we set off to the east in search of *Russula nana*, a red-capped fungus, which associates with Dwarf Willow. We failed to find it with willow but did find it with Viviparous Bistort. Over the ground in little neuks at the base of stones, the delightful tiny fungal fruiting bodies of the lichen *Omphalina hudsoniana* were seen. (A lichen is an alga and a fungus growing together in a symbiotic association.) One rather scruffy specimen of *Omphalina alpina* was found. The much more common *Omphalina ericetorum* and *O. grisella* were also at this altitude. Also in a wet area, *Hygrocybe perplexa* was spotted by our tutor who told us it was a rarity in Britain. The next treat of the day was *Paxina acetabulum*, a cup fungus on a stalk with the underside of the cup strongly ridged. This was identified as a rare alpine variety of the lowland species.

Coming downhill we were told to look out for a brownish, leafy, ear-like fungus and there, in a wet flush, was such a growth (*Arrhenia lobata*), an uncommon species which likes wet mountain areas. Around the same vicinity were short, creamy spikes of *Clavaria argillacea* which we were told was a form *sphagnicola* which is rare in Britain.

The day we went to the Hermitage, near Dunkeld, it was the litter and wood decomposers that were most conspicuous. There we found the lovely Plums and Custard (*Tricholomopsis rutilans*) named because the young purple cap expands to show yellow. We also found the rarer *Tricholomopsis decora*, which was quickly given the name “Prunes and Custard”.

Other species worthy of note as they are Highland species and rare elsewhere are: *Lactarius trivialis, Lactarius hysginus, Leccinum roseotincta, Russula obscura, Pleurotellus porrigens.*

During the week we learned the aniseed smell of *Clitocybe odora*, the cleaning fluid smell of *Entoloma serricatum*, the raw potato smell of *Inocybe fastigiata*, the coal tar smell of *Tricholoma bufonium* and the marzipan smell of *Russula laurocerasi,* and on the final day while having a “fry up”, the delightful apricot aroma of *Cantharellus cibarius*, the Chanterelle.

Ena Gillespie

A TRIP TO THE BURREN

Have you ever been across the sea to Ireland? Well, we have – at least we flew to Shannon to explore the west. Our party comprised a few members of the ENHS. We quickly found ourselves in the Burren (not because it’s signposted – it isn’t), and got completely lost in the maze of small roads. It is a fantastic area, great flat plains of limestone (clints) with deep fissures (grykes) holding lots of plants and ferns, all reaching up to the light. The hills rise in a series of limestone steps, often eroded into weird shapes – this is “karst” country. Water is scarce as the stone is so porous, but runs underground as it does at Malham. A report to Cromwell on the Burren says, “Not any tree to hang a man, nor enough water to drown him, nor enough earth to bury him.” Even so, there is much evidence of occupation by prehistoric man. As it was September all the choice flowers were over but it was still colourful with Golden-rod (*Solidago virgaurea*), Scabious (*Scabiosa columbaria*) and blood-red Geranium (*Geranium sanguineum*). Hazel (*Corylus avellana*) has invaded the flat areas.

The Aran Islands are an extension of the Burren – tiny fields with soil made from sand and seaweed which is put on the limestone and walled with limestone blocks.

The great, bare granite mountains of Connemara, the 12 Pins, the Maamturks and shaly Mweelrea drain into salmon-rich loughs and rivers. The heathers (*Calluna vulgaris, Erica cinerea* and *E. tetralix*) were still blooming, as were lovely orange sprays of Montbretia (*Tritonia* sp.) by the roadsides. There are vast areas of peat cutting (turf in Ireland). It is cut mechanically and does not seem to be the laborious task that it is in the Hebrides.

We turned south and headed for the Dingle and Bere peninsulas, again quite different, with a spine of hills, great wide “strands” of sandy beaches and magnificent cliffs standing against the big Atlantic seas. The Choughs were a delight to watch with their acrobatic flight and cheerful calls. Ravens were living on the cliffs, too, and Wheatears, Whimbrel and Redstarts were passing through on migration. The last outpost, the Blasket Islands stood out to sea, the home of

Gannets, Guillemots and Puffins. On the peninsulas were many standing stones and stone circles of early man, and early Christian sites, crosses and tiny churches of the seventh and eighth centuries.

One evening a herd of wild goats crossed our path. Away from the sea the Fuchsia hedges were a blaze of red and purple. The people were so friendly and the bed and breakfasts very frequent, cheap and excellent.

Connie Stewart

LA SELVA – A JUNGLE EXPERIENCE

For three short days we were to stay at La Selva, a hotel by a lake in the Amazonian jungle in Ecuador. Getting there was quite an adventure in itself. The first stage was ordinary enough, a plane flight from Quito to Coco. An open truck then took us to the wharf on the River Napo, a tributary of the Amazon. Alongside the wharf a wide concrete staircase led down into the muddy water. Women and children thronged the steps – waiting their turn for the bottom one, in the water. There a woman sat gutting fish while on either side other women were busy doing their family washing! Meanwhile we climbed into a large dug-out canoe powered by two Yamaha outboard engines and set off down the swiftly flowing river. After three hours, during which we had to negotiate shifting sandbanks, we were decanted on to the bank and walked along a board-walk for half a mile or so through the jungle. Enormous damselflies, like helicopters, flew tantalisingly overhead. Jungle noises of unknown and unseen birds and monkeys added to the pleasurable anticipation of reaching our destination. The board-walk ended at a jetty where several small dug-out canoes were waiting. Soon we were being paddled through a narrow creek and out onto a sizeable lake at the far side of which was our hotel. It grew out of the jungle. The main buildings were blissfully cool, entirely of bamboo and thatched with palm leaves. They were perched on bamboo stilts. Bamboo walkways led to bamboo cabins where a life-saving cold shower awaited us.

It had been a long, tiring day and at dinner that evening we were a trifle subdued until someone noticed a very large hairy spider, a tarantula, on the wall. Apparently these spiders, as big as soup plates, live in the hollow bamboo, coming out in the evening to catch prey. They were the house pets of the establishment.

The surrounding forest is a nature reserve and virtually unaltered. Getting about could only be done by canoe to landing places from where paths had been cleared by machete. Across the lake is secondary forest where the local Indians clear small areas, grow crops for several years, then allow the forest to take over when the soil becomes exhausted. Some of them have pet monkeys running free but trustingly coming to us for the expected tit-bits, grasshoppers, which we had to collect for them on the way. There were several Black Tamarinds and a tiny Pygmy Marmoset, the smallest primate in the world, which was getting no peace at all to enjoy its grasshopper snack as it was being pestered by a playful kitten considerably larger than itself. In the jungle truly wild monkeys are often heard but seldom seen.

Birds, too, are normally difficult to see among the canopy. In the early morning and evening, groups of Red-billed Macaws flew over the hotel going to and from their roosts. Kingfishers of different species were frequently seen perched above the lake but it was the strange, exotic birds that amazed us by allowing a reasonably close approach by canoe. The noisy Hoatzins with their bare blue face patches and wispy up-standing crests were ever present beside the lake though seldom close enough for a photograph. Anhingas, or snake-birds, swam with submerged body as we had expected but we did not somehow expect to see them perched in trees where they look quite different. We were paddled within binocular viewing distance of a Zigzag Heron's nest. The sitting bird was perched on a ridiculously small platform nest built 10 feet above the marsh on a spindly tree. There it sat quite motionless, sky pointing like a tiny Bittern. We were told that this was only the third nest ever seen of this elusive bird.

I had been given permission to do limited collecting of dragonflies on behalf of the Royal Museum of Scotland. The dragonflies were most plentiful over dense patches of Water Hyacinth in the lake. Balancing oneself while sitting in a narrow dug-out canoe is difficult enough. Standing up and swinging an outstretched net at speed to catch dragonflies is much more difficult – and we had been told that Piranhas swam in the water beneath. Fortunately we had an excellent and resourceful guide, Cynthia, in our canoe. Once she had mastered the technique of wielding the net she became a most enthusiastic and successful collector while balancing with practised ease at the front of the canoe.

Walking along the paths through the jungle was like being in a David Attenborough documentary film. On one occasion we found ourselves accompanied by a long column of leaf-cutter ants purposefully marching along while carrying aloft large pieces of leaf to add to their fungus garden. When we crossed a marsh on a series of large felled timbers, balancing ourselves with pre-cut poles, the marching column never wavered but pressed on over the same logs and their unfortunate companions. Their destination was a domed area of decaying vegetation about the size of a large room. Several holes led into the passages of the nest area extending to three metres deep. The ants control the temperature of their fungus gardens by adding fresh or dry leaves. Stamping one's foot on top of the nest was enough to bring soldier ants rushing to defend the nest.

Cynthia was an absolute mine of information about the jungle. Spiders seen on the vegetation were of the most bizarre shapes and striking colours. The web of one species is apparently made of a silk so tough yet lightweight that scientists are trying to synthesise the material to make bullet-proof vests! Many of the tree species and their potential value for, say, medicine have yet to be properly investigated. Some uses are long established, such as the Panama hat industry (the best of these are made in the Ecuadorian jungle) from the leaves of a species of palm, and the extraction of menthol from the bark of a tree. Others, such as the making of ornaments and jewellery from "vegetable ivory", the seed of the Tagua Palm, are recent developments that are sustainable and do not damage the forest in any way. Cynthia pointed out to us many of the adaptations that the plants have evolved; the drip tips on leaves to shed the torrential rainfall; the buttress roots radiating out over the thin soil; the association between the Sacropia tree and ants, whereby the ants live in holes in the twigs, specially evolved by the tree for their use, and keep the leaves free of damaging caterpillars.

Nearing the end of our stay we had one regret. We had never again seen the "helicopters", those enormous damselflies which we had glimpsed on our arrival. That last evening Cynthia, who had been trail-walking with another group of visitors, brought us a folded banana leaf in which she had carried back a precious specimen of this elusive creature (*Microstigma rotundatum*). Apparently it had been perched on a branch which was brought down with an expert blow by a machete wielded by her Indian helper. I feel sure it is the first time that the Royal Museum of Scotland has had a dragonfly caught for it by machete!

Betty Smith

THE BIG HAWKS

"Big hawks" is a very loose term for diurnal birds of prey and vultures, Peregrine-size and upwards. In Scotland there has recently been an increase in the big hawks that would have seemed like a fairy-tale to the 1950s Lothian bird-watchers. Thanks largely to the RSPB, the NCC and the Forestry Commission, we have witnessed a minor revolution. Hen Harriers, Buzzards and Peregrines, rarities then in Lothian, now regularly nest locally – though sadly harassed by gamekeepers. Osprey have reappeared and, thanks to protection and the provision of artificial nests, there are now more than 60 breeding pairs. The release, over many years, of young Sea Eagles of Norwegian stock, has established a small but solid base in north-west Scotland – with five broods fledged this year. A somewhat similar programme is under way for Red Kites with young birds being released annually in North Scotland and England, well away from their Welsh stronghold where the number of pairs and fledged young has steadily increased over the years. Marsh Harriers have increased from one or two pairs to over 30, almost entirely because of protection at their nesting sites. Goshawk, the Buzzard-sized big brother of the Sparrow Hawk, had disappeared from Britain due to persecution. Birds which have escaped from falconry or been deliberately released by falconers and others have now built a breeding population of over 100 pairs. Both in terms of species and of actual numbers our big hawks, although still persecuted by gamekeepers and egg-collectors, are more numerous than at any other period during the whole of this century.

In spite of this increase it is rather difficult to see several individuals of this group at any one time in Britain. To do so one must go abroad and the Pyrenees is probably the nearest stop where one can see several dozen or more individuals of this magnificent group in a day. On 23 August this year we came out of a supermarket just north of Lourdes and became aware that a kite passage had developed during the short time that we had been inside. Birds were drifting in from the north in small groups, finding a thermal just above us, soaring and circling on steady wings to rise higher and higher for perhaps up to 1,000 metres before heading off on a steady course due south for the Pyrenees and Africa. There were a few Red Kites, their long, forked tails occasionally showing red as they turned, and a single Honey Buzzard, but the 120 Black Kites made up the bulk of the movement. The fascinating aspect is the almost complete absence of active wing-flapping. The birds use the thermals to gain height then sail for many miles gradually losing height before finding another high-rise lift of hot air. With a minimum of energy loss they can traverse through the heat of Spain, rise over Gibraltar to glide into Africa and cover thousands of miles with hardly a wing-flap.

On to Gavarnie on the Spanish border and we cut off, up the narrow, twisting road that runs up into the Vallée d'Ossoue. Here the road levels off, the valley floor widens and cattle graze the rather sparse grasses and flowers bordering the rapidly flowing stream. It is an idyllic place, hot whenever the sun rises above the high ridges bordering the valley. Among the butterflies were the beautiful large Apollos, white with big, round black and red spots, flitting in the heat among the three foot high irises. The valley resounded with the loud whistles of Marmots and one enormous jumble of rocks was a haven for these two foot long rodents. As we advanced with camera and binoculars to a very large and trusting specimen we found Black Redstarts and Ring Ousels as well. As we sat down to survey the scene some Rock Buntings, a Melodious Warbler and an Icterine Warbler appeared, then a splendid male Rock Thrush in rufous, blue and white plumage. Above the ridge to the north sailed small parties of Griffon Vultures, long-necked and short-tailed and with broad, square-ended 8 foot wing-spans. Even larger were the Lammergeiers easily identified by their long, narrow wings and very long diamond-shaped tails. At close range they show all dark wings and tail with contrasting pale (fulvous) head and body. This was a declining species which is now closely protected and on the increase. Two pairs nested this year on the high cliffs guarding the entrance to the Vallée d'Ossoue and there are reported to be more than 50 pairs now breeding in the Pyrenees.

Above Gavarnie lies the Brèche de Roland, a curious cut in the high, narrow band of rock that is the French/Spanish border. The approach from both sides is steep and the short summit ridge very narrow. Thousands of butterflies, mostly Small Tortoiseshells, Large Whites and Brimstones, were making their way up to the cut, then battling their way forward at the summit against the strong south wind, looking for a weak point in the air current – almost like salmon struggling up a fall. There were dozens of Alpine Choughs among the vultures and several Alpine Accentors below, colourful cousins of the more sober Dunnocks 3,000 feet below.

Several days and many birds, plants and butterflies later, we stopped at a campsite at Hecko in Spain. The big hawks had been in smaller numbers but around the campsite, encouraged by a rubbish dump a mile off, they reappeared in force. Some 40 Ravens, 30 Egyptian and 10 Griffon Vultures and 20 Red Kites were visible from the camp and up an adjacent valley were five Booted Eagles (black and white below, Buzzard-size), several Bonelli's Eagles (intermediate in size between Buzzard and Golden Eagle) and lots of vultures and Red Kites. When we left the mountains for the cultivated plain we saw our first Common Buzzards along with Rollers and Bee-eaters, and our first (surprisingly) Short-toed Eagle. It is bigger than a buzzard and all pale with a few black lines below, hovering huge and ungainly in its search for its main food, snakes.

Next morning we were driving steeply uphill past an old monastery built into the hillside and far up to a good outlook over the high bluff. Just as we stopped, 35 Griffon Vultures launched, a few at a time, from the sheer cliff below, sailed out for a few hundred yards then began a slow, steady circle on motionless wings, rising steadily till they gained a good height before sliding away to begin the day's hunt for food. It was 10.30 am and the temperature had risen enough to provide the required air current to life them up and away from their roosting cliff. Many bends and several hundred feet above, we stopped for coffee. A Griffon sailed round 50 feet above us, followed by several more, then a Booted Eagle, several Egyptian Vultures and Red Kites. We were obviously on the line of the upward spiralling staircase. Then the movement stopped, we drank our coffee and turned our attention to the more mundane Rock Grayling butterflies and Humming-bird Hawkmoths.

The highlight of the day for Betty was a Rio (stream) that actually had some running water and there we saw our first Spanish dragonflies (seven species). My highlight was a natural swimming pool, some 10 metres square and up to three metres deep, formed in this same stream – a godsend in the terrific heat of the day. On then to a panorama of enormous rock pinnacles where hundreds of Griffon and Egyptian Vultures, specks against the cloudless evening sky, were slowly and endlessly drifting down to their breeding and roosting ledges. It was a pleasant end to four weeks of almost unbroken sunshine. The violent thunderstorm with torrential rain on our run-in to Santander the following day was as yet in the future. The present was the tranquility of the vast bluffs with "big hawks" in numbers that we would not see again for many a long day.

Bob Smith

WOOL ALIENS, ADVENTIVES AND SHODDY

Our day at Gala Water, near Galashiels, on 22 June started with heavy rain showers, soon clearing to beautiful sunshine – and produced a plant list of nearly 200 species. To me, some of the most interesting species are the "Wool" and other aliens. My fascination with these started in 1969 when strange little yellow peaflowers appeared in my garden and my newly acquired flower book said they grew only in the south of England and in fields manured with shoddy. At that time I didn't even know that shoddy was waste wool! The mystery was partly solved when Arthur Smith of Selkirk lent me a book, *The Adventive Flora of Tweedside*, published in 1919, by Ida M. Hayward FLS and George Claridge Druce FLS. I.M.H. belonged to a tweed manufacturing family in Galashiels and G.C.D. was Fielding Curator at Oxford University and Honorary Secretary of the then Botanical Society and Exchange Club of the British Isles.

Miss Hayward's task was to find nearly all the species enumerated and "year after year she has industriously explored the pleasant banks of the Gala and Tweed, and taken hazards frequently in both these waters, with the good fortune that often attends the adventurous." Still true of botanists today? Druce prepared the introduction, classified the plants and wrote the botanical text. Apparently, by 1919 Tweedside was acknowledged to have the richest adventive flora in Europe excepting Montpellier, near the Mediterranean coast of France. How did this happen? The book tells the whole intriguing story sometimes (appropriately?) in flowery language. To summarise ...

In earlier times preparation of wool was a cottage industry; it was done by hand and the wool came from sheep in the immediate neighbourhood. The advent of machinery in the late eighteenth century led to increased output, and that, together with a demand for finer cloth, meant wool had to be imported. Merino sheep from Spain provided a finer and silkier material which was much in demand. Gifts of several varieties of Merinos were made by the King of Spain to Saxony, Austria, the Dutch Governor of South Africa and to our King George III. The first consignment of this wool to Galashiels came from Saxony. Early settlers in Australia imported a few Merinos from South Africa and India to crossbreed with English sheep; the Spaniards themselves took the Merinos to South America whence they spread to North America. So sheep from Spain were dispersed all over the world, and most important botanically, everywhere they went, seeds and prickly burrs stuck fast in their fleeces. Plants native to the Mediterranean countries spread luxuriantly in their new homes, especially in the southern hemisphere, and later generations of fleeces arriving at the Border mills contained seed from these naturalised plants as well as those native to the sheep's new homes.

Wool had to be thoroughly washed and scoured before processing and the effluent from the Galashiels mills containing many exotic seeds poured directly into the Gala Water and thence to the Tweed, where seeds found anchorage. They germinated and flowered, though the more tender species did not survive for long. Heaps of mill waste containing seeds and especially hooked burrs also provided a suitable habitat. Several botanists recorded species of wool aliens from as early as 1870, but Miss Hayward found the majority between 1908 and 1917 reaching a total of 348, including a few new to Europe and even the world. Shortly before the book was written a new more effective sewage system was built at Galashiels. The amenities of the river gained but almost the whole source of adventive plants was cut off. Nevertheless, many plants survived for some time and Mrs. Olga Stewart and the late Miss Mary McCallum Webster recorded over 200 species between 1960 and 1971 around Galafoot (see Appendix 3 of *Flowering Plants and Ferns of Selkirkshire and Roxburghshire* by Dr. R.W.M. Corner).

What of my garden wool aliens, which appeared until the mid 1980s? – only in *my* garden, not my neighbours', and far from any woollen mill. It transpired that a previous owner, about 1920, was a wool dyer and did experiments in a large back porch. No doubt the wool shoddy was used to manure the garden and the seeds remained dormant until brought to the surface under conditions which allowed them to flower and fruit. This taught me that viable seed can lie dormant for many, many years, a useful lesson for a beginner. I had always hoped to re-find more wool aliens but was told there was little or no chance because the areas had become completely overgrown. Imagine my delight when we started to find some species in 1990. A year or two earlier the Council had cleared the left bank of Gala Water of scrub and trees and bulldozed the ground bare to allow flood water to run there instead of into buildings on the opposite bank. Survival of seeds again!

I am keeping a list of all species found and am grateful to all who helped to find plants on 22 June (and previously), particularly Jackie Muscott and John Winham who identified grasses, etc. which I could not do. For the future, who knows? The area is already becoming rather overgrown in places and two wool aliens recorded in 1990 could not be found in 1991. There follows a list of the more unusual plants found on the outing.

Wool aliens

Spotted Medick (*Medicago arabica*) – first recorded 1869; Miss Hayward found it abundantly on the banks of the Gala.

Toothed Medick (*Medicago polymorpha*) – native in eastern and southern England and in countries bordering the Mediterranean. One of the very frequent wool aliens carried by Merino sheep into both hemispheres. The fruits with hooked spines are of very common occurrence in wool. Abundant in Australia, New Zealand and South America, "it is not a little curious that this native of the Old World, doubtless taken out with Merino sheep from Spain, should again return to Europe and grow abundantly and luxuriantly on the shores of the inclement Tweed." Fortunately, there was no inclemency on our visit though, alas, we had great difficulty in finding a solitary specimen.

Subterranean Clover (*Trifolium subterraneum*) – native, from Cornwall and Kent to Anglesey and Lincoln. "Remarkable because the fruit is usually matured beneath the soil. At first the stems are arcuate-ascending, but as the flowering period ceases the flower stalk bends at the end so that its top is directed downwards and eventually buries itself in the earth and becomes rooted beneath the surface." First found by Miss Hayward in 1914. We found several large clumps.

Narrow-leaved Clover (*Trifolium angustifolium*) – a native of southern and south-eastern Europe, Asia Minor and North Africa, first found on Tweedside in 1908. Found by Miss Hayward on the banks of Gala Water. Two clumps were found in 1990 and 1991, but they were not in flower on 22 June.

Found in 1990 but not in 1991 were *Medicago minima* and *Trifolium tomentosum*, the latter interesting because the calyx containing the seeds swells up balloon-like and is densely covered with white woolly hairs. It slightly resembles a green/white raspberry in shape.

Adventive plants other than wool introductions

Early Golden-rod (*Solidago gigantea*) – ? garden escape, native of North America. Miss Hayward records it in 1912 as abundant along the banks of the Tweed. Now very abundant on the banks of Gala Water.

Japanese Knotweed (*Reynoutria japonica*) – "a showy shrub of robust growth on banks of Tweed near Melrose, 1914." Now too abundant on the banks of Gala. I am glad to say I met a council employee spraying it (only) with herbicide.

Ternate-leaved Potentilla (*Potentilla norvegica*) and *Potentilla intermedia* – these two were probably introduced via the railway. They were once uncommon but recently became locally abundant in a fenced-off area of rough grassland full of many flower species, near the route of the disused railway.

Knotted Clover (*Trifolium striatum*) – is not an alien but a rare plant in the area.

Margaret Little

BOTANY OF THE LOTHIANS SUMMER EXCURSIONS

Faced with a very long list of squares not yet assigned to recorders, the Botany of the Lothians Committee organised a series of summer recording excursions. It was hoped that the attendance would be such that several squares could be recorded at each meeting. This hope was not realised. However, all but two or three of the meetings took place, some very useful recording was completed, and those who participated enjoyed the outings. I suggest that finding orchids blooming in a derelict industrial estate in West Lothian on a very wet day, compares favourably with the experience of being led up a mountain to look at a saxifrage in an alpine habitat. It is possible that the reason for the low attendance at these meetings was that recorders were busy finishing the recording of their "own" squares. If so, would recorders please send completed records of squares to Douglas MacKean, Royal Botanic Garden, as soon as possible.

Pat Cochrane

NOTES ON NATURAL HISTORY 1991

Observations

12.01.91 Covenanter's Grave, West Pentlands: 20 Snow Bunting (AL,GM)

10.02.91 Union Canal, Linlithgow (NS 970758): Deep snow had driven eight Snipe from their usual habitats to the open river and canal. (DA,SA)

14.02.91 Bawsinch SWT Reserve: One Water Rail; one Lesser Black-backed Gull. (CR)

19.02.91 Inverleith Pond: Two Mergansers stayed for four days, and on 9 April another single male. (CS)

21.02.91 Queensferry: Small Tortoiseshell butterfly on Coltsfoot; another in my garden on 24 February. (CS)

24.02.91 In the grounds of Carberry Tower (NT 3669): Two *Phallus impudicus* just above ground. Although the day was damp and mild, snow was lying on the Pentlands from a recent cold spell. (EF)

02.04.91 Meggetland Terrace: 20 or more Wax Wings feeding on Cotoneaster berries. (MB,SL)

07.04.91 Lady Lothian Wood, Inveresk: A small colony of yellow Star-of-Bethlehem (*Gagea lutea*) found growing in a sandy area on the west bank of the South Esk – interestingly, upstream of the known site at Cowpits. (JM,JW)

15.04.91 Ben Sheean, Strathyre: Pair of Ravens nesting on a rock ledge (GM,JC)

15.04.91 Beecraigs Country Park: Seven Crossbills picking at bark of dead Elms. A larger flock of around 40 birds engrossed in feeding on larch cones near a picnic area. The Crossbills' feast was gatecrashed by two Great Spotted Woodpeckers flitting between the trees. (DA,SA)

07.05.91 Inverleith Park: One male Blackcap singing. (CR)

20.05.91 Dere Street, near Soutra: A small colony of Marsh Valerian (*Valeriana dioica*) was discovered, just on the Lothian side of the border stream, in the course of a preliminary *Botany of the Lothians* survey. (JM,JW)

03.06.91 Corstorphine: Magpie seen killing fledgling Sparrow on neighbour's roof. (DA)

16.06.91 ENHS weekend at Dinnet: *Leccinum aurantiacum* growing with Aspen at Burn-o-Vat. (ENHS outing)

06.07.91 Glen Lyon: Near footpath leading from Innerwick to Loch Rannoch, a Sparrowhawk (male), Hen-harrier and Golden Eagle appeared one after the other, the eagle obligingly landed on a nearby hillside, affording a good view through binoculars. (SA,DA,GM)

10.07.91 Sluggan, by Loch Morlich, Speyside: *Boletus pinicola* with Scots Pine and *Gomphidius glutinosus* with Spruce. (EF)

20.07.91 Gore Glen, by Shank Bridge (NT 338614): Near the car park, *Volvariella hypopithys.*

20.07.91 Whiteadder Reservoir: Whilst walking near the reservoir, an adder was seen coiled on a dry bank. It remained still for over five minutes although four of us observed it from a few feet. It then moved slowly up the bank to the edge of a pine plantation. Its skin was dry and dusty but the pattern was unmistakable. A casual look at the same area ten days later revealed the sloughed off skin and, making its way to a clump of heather, a very clean and shiny adder. The skin was nearly perfect and measured 26 inches. From the new edition of *Reptiles and Amphibians* (New Naturalist), this is longer than the average and probably from a female. (EL)

28.07.91 Glen Lyon (NN 590506): A later visit to the path mentioned in the note for 6.7.91 produced no birds of prey, but five species of Clubmoss (*Diphasiastrum alpinum, Huperzia selago, Lycopodium annotinum, L. clavatum* and *Selaginella selaginoides*), all healthy and producing spores, along a half mile stretch. (SA,DA,GM)

12.09.91 Milkhall Pond (NT 242573): Probable Natterer's Bat – while working at Milkhall Pond we were surprised to see a bat hunting above the end of the pond on a bright, sunny afternoon. It was watched for some 10 minutes when it disappeared and later for a minute when it emerged from the adjacent trees. It was obviously larger than a Pipistrelle and flying much less erratically, reminding us at times of a wader's flight. It flew around at about 50 feet and occasionally down to nearly water level. It was long-winged and the short-ears were obvious on occasion. The jizz was similar to a Natterer's Bat we had watched several years ago and it seems most likely to have been this species, although our experience of this group is limited. The only possible alternative would be Noctule's which does not, apparently, reach Scotland. (RS,ES)

14.09.91 In the grounds of Carberry Tower (NT 3669): Fungi were sparse on this outing but there was a magnificent display of *Gymnopilus junonius* growing on the upturned roots of a fallen tree. (ENHS outing)

22.09.91 Peffer Sands (NT 615838): From the rocky tidal zone a Stoat ran across the beach and into long grass. Presumably it had been hunting among the pools for birds, crabs or molluscs. (DA,GM)

06.10.91 Figgate Park: Two House Martins overhead, drifting south. (CR)

19.10.91 Hermitage of Braid: A beautiful apricot coloured *Lactarius*. Identified by Dr Roy Watling as *Lactarius ichoratus*. (MC,EF)

20.10.91 Clyde Valley: 14-spot ladybirds seen. (ENHS outing)

14.11.91 South side of Corstorphine Hill: Earthstar (*Geastrum triplex*) seen in private garden. (EF)

15.11.91 Inverleith Park Pond: Two male Tufted Duck; one male Red-breasted Merganser; one Little Grebe. (CR)

16.11.91 Bawsinch SWT Reserve: One Bittern, a second bird reported. (CR)

Fulmars (*Fulmarius glacialis*) observed frequenting the old quarry on Traprain Law, East Lothian during the summer. (DJ)

Successful breeding has been noted in previous years and is believed to have occurred in 1991. (RS)

Sand Eels: For lunch at Cley, Norfolk, in October I was offered Sand Eels instead of Whitebait. As the Terns had gone I felt it was permissible – and very nice they were too. (CS)

Fasci(n)ating

A new word to my vocabulary in 1991 was fasciation.

It began in June when a neighbour showed me a "strange" plant in his garden. This turned out to be Goat's-beard (*Tragopogon pratensis*) known to many as "Jack-go-to-bed-at-noon". Of a group of three plants one was indeed strange. It had stems fused together and a head which looked like a thick, green, fleshy cockatoo's crest. Along the top of this crest were a few rudimentary florets. At the next Society outing I showed a photograph of this plant to the botanical members who immediately recognised it as an example of fasciation.

My dictionary definition of fasciation is "the union of a number of parts side by side in a flat plate" and this is a fair description of the symptoms.

A few days later in another nearby garden I was shown a distorted Delphinium which again showed the fusing of stems and flower heads. Was this coincidence or was there a reason, such as the local weather pattern, a local plant pest or a nearby use of noxious chemicals?

Another Society member then told me that he had seen a fasciated Buttercup in a different part of the country and finally on the Society outing to Dere Street on 3 August we all saw a fasciated Marsh Thistle (*Cirsium palustre*) in an area of the Cheviot Hills most unlikely to be affected by chemical sprays of any sort.

So the question remains – what causes fasciation? Is it there every year and I simply had not previously encountered it, or was 1991 a fasciating year? I don't know. Do you?

Duncan Gill

Editor's Note

A quote from *Plant Form and Function*, Fritsch and Salisbury 1938: "Occasionally plants exhibit unusual forms of growth which are probably a result of exceptional physiological conditions. Such *monstrosities* find expression in various ways, most commonly in so-called *fasciations* which represent a combined development of the different branches of a shoot system, so that the whole forms a flat structure. A similar process leads to the production of the cauliflower, a fasciation which is inherited."

Barn Owl Encounters

I was delighted by my first sighting of a Barn Owl, on a Society visit to Lanrick Castle near Doune in 1989. It emerged silently from a set of disused estate buildings on being disturbed by other members.

I did better in August 1990 when passing an empty farm steading one evening near to Mocrum in Galloway. We heard a high pitched squealing noise which made us think in terms of young Barn Owls. Patience was rewarded when an adult flew down from inside a building and perched briefly on a broken window frame. It then emerged and we could watch it hunting along a nearby hedge side.

This year in Berwickshire, I have had a number of sightings of Barn Owls at dusk as they hunt along field edges. In mid-August I found a half-grown Barn owl chick on the ground in a recently harvested barley field. A nearby dead tree had been felled and sawn into logs in a tidying up operation and it appeared that the owl had lost his home and parental support system. Not only that, the straw stubble in the field had been recently burned and owlet had badly singed feathers. He had thus had a double trauma and appeared to be both weak and in a state of shock. A local veterinary surgeon was prepared to give the bird his attention – indeed he was glad to do this and it transpired that he already had a young owl, presumably a sibling, from the same field. He diagnosed severe dehydration. Under his experienced care both owl chicks quickly recovered feathers, confidence and appetite and by now will have been returned to the wild. As Barn Owls usually have more than two chicks in a clutch I visited the field in question at dusk on subsequent days. An adult owl came to the site each evening – at first calling, presumably for its chicks. However, no more chicks were found.

At the end of August I found another Barn Owl, this time fully grown and this time dead. It was in a field water trough and appeared to be unmarked and only recently dead. August was a dry month and I surmised that it had come to the trough to drink, had got into difficulty, been unable to emerge and so had drowned.

Duncan Gill

Forth Island Bird Counts 1991

	Craigleith	Lamb	Fidra	Eye-broughty	Inchkeith	Inch-mickery	Carr Craig	Inchgarvie
Fulmar	162	2	177		575			82+
Cormorant	83	207					220	
Shag	646	305	242		30		23	
Great Black-backed Gull	3+		1+					
Herring Gull				141			41	125
Lesser Black-backed Gull								5
Kittiwake	225+	106	494		612			
Razorbill	80	32	91		42			
Guillemot (bds)	107+	2,400	197		48			
Puffin (bds)	1,550	5+	600		3,000			

All counts are of nests or occupied sites except for those of Guillemot and Puffin which are of individual birds. The Inchmickery counts from the RSPB are not available. For the whole of May northerly winds had pounded the East Lothian coast and obviously a minor miracle was needed to enable our 1 and 2 June visits to go ahead. Alas our prayers went unanswered! Instead, on the 1st we walked over the rocks at low tide on to Eyebroughty to count the Cormorants. There was none – the first *nil* count since they colonised the island many years ago. On the 8th we managed to land on the south sheltered side of Craigleith but Inchkeith the following day was called off. Still the north winds persisted but only force 4 permitted a landing on Inchkeith on the next Saturday and a decrease to NW2 next day saved the 1991 counts. After mid-June seabird numbers start to diminish as young Cormorants and Shags are starting to fly and the Auks, when half grown, jump into the sea and swim off with their parents to feed and moult well away from land.

The severe weather obviously had its effect on exposed nest-sites on these offshore islands. On Fidra and lamb, Kittiwake nests were drastically down on the north-facing cliffs but had increased on the sheltered south-facing ones. Overall, on the East Lothian islands there was a large decrease yet, interestingly, on the more sheltered Inchkeith numbers had gone up by 56 nests although this was not nearly enough to compensate for the other losses. There had obviously been quite a “shift” of established nesting birds away from the devastating winds. Reports from the Isle of May are that Shag numbers have dropped dramatically and yet all our islands show a huge rise averaging more than 20 per cent. Did we benefit from an influx of refugees from the May or did many birds there just “skip” a breeding season because of poor feeding during the gales? Is our population still rising steeply as it has done generally for many years? Or are the “experts” correct, at long last, when they assert once again that the Forth/Farnes Shag population has peaked and is now on a downward path. There is no room for doubt with the Cormorants. Their numbers this year have reached a new high. The desertion of Eyebroughty was certainly caused by the exposed nature of the site to a north wind but they merely moved to the Lamb on to the south-facing sheltered top.

The Auks are more difficult to interpret. Razorbills and Guillemots are not noticeably decreasing, although, worryingly, numbers of both were down by one third on Inchkeith. Any substantial drop in the population would have most impact on the innermost islands such as Inchkeith. Puffins, on the other hand, show no diminution with more than ever before on Fidra and Inchkeith. On the latter island one of the resident dogs was seen digging out Puffins in the soft soil and cacheing the bodies and eggs among the rocks on the shore. I suppose, in these days of competition and enterprise, some might commend him to the "Top Dogs" for his energetic work. Puffin lovers might have other ideas. However, there is a possibility that the Animal Home might some day return to the mainland which would remove this particular irritation.

Bob Smith

WANTED
!

Spider Catchers

• No previous experience required •
• On-the-job training provided •

Contact:
Jim Stewart, 109 Greenbank Crescent
(Tel. 447-4210)

EXCURSIONS 1991

Key for excursions:

B	– botany	Ge	– geology
C	– conservation	ML	– mosses & liverworts
Ent	– entomology	O	– ornithology
FWF/F	– fresh water flora/fauna	S	– seashore
F	– fungi	T	– trees
G	– general		

Day excursions

1991			**Leader**
19 Jan	Fife Coast Walk	G	Mrs. M. Clarkson
16 Feb	Royal Botanic Garden (winter trees and buds)	T	Mrs. M. Robertson
16 Mar	Dunbar (seashells)	S	Dr. D. Peacock
20 Apr	Abbey St. Bathans	OGBT	Mrs. M. Watson
27 Apr	Vogrie Country Park	FWF/F	Mr. D.H. Jones
4 May	Pepper Wood	C	Mr. G. McDougall
11 May	Inchcailloch, Loch Lomond	OG	Mrs. M. Clarkson
12 May	Chatelherault	F	Dr. A.J. Silverside
18 May	Humbie Wood	G	Mr. D. Gill
25 May	Falls of Clyde	GT	Ranger
1 Jun	Acharn, Loch Tay	B	Mr. G. McDougall Mr. D. Adamson
1 Jun	Bass Rock, SOC	O	
2 Jun	Lamb & Fidra, SOC	O	
8 Jun	Craigleith Island, SOC	O	
8 Jun	Barns Ness, Dunbar	GeBO	Ranger
14–16 Jun	Glen Tanar W/E	G	
22 Jun	Gala Water, Galashiels	BG	Mrs. M. Little
29 Jun	Spottiswoode, Berwickshire	GT	Mr. G. McDougall Mrs. J. Lyburn
6 Jul	Longnewton Railway Cutting	BEnt	Mr. A. Smith
13 Jul	Yellowcraig, East Lothian	B	Miss H. McHaffie
20 Jul	Tay Marshes, Perth	B	Mr. J. Winham
27 Jul	Roslin Glen	F	Mrs. E. Farquharson
3 Aug	Dere Street	G	Mrs. C. Stewart
10 Aug	Dobbs Linn, Moffat	GeB	Mr. W. Baird
17 Aug	Aberlady Bay	OG	Mr. W. Clunie
24 Aug	Legerwood Farm Trail	G	Mr. D. Gill
31 Aug	Elie to St. Monans	G	Miss M. Woolgar
7 Sep	Akermoor Loch	G	Mrs. J. Lyburn
14 Sep	Carberry Tower	F	Dr. P. Mason Dr. A. Newton

21 Sep	Monteviot Woodland Centre, Jedburgh	F	Mr. S. Roberts
28 Sep	Fungus Foray	F	Mr. R. Hunter
4–6 Oct	Southend, Kintyre	F	Dr. A.J. Silverside
13 Oct	Bawsinch Open Day	GO	SWT
26 Oct	Farne Islands	SealsO	Mrs. J. Lyburn
23 Nov	Hopetoun House Grounds	G	Mrs. M. Robertson

Evening Excursions

15 May	Hermitage of Braid	G	Miss D. Mack
22 May	Erraid Wood	C	Mrs. E. Smith
29 May	Pepper Wood/Kirkliston	B	Mr. J. Carlyle
5 Jun	Leith Docks	B	Mr. C.P. Rawcliffe
13 Jun	Gullane Dunes	B	Dr. A. Tudhope
19 Jun	Gore Glen, Arniston	BG	Mrs. M. Robertson
26 Jun	Blawhorn Moss	B	Mr. D. Adamson
3 Jul	Hillend to Swanston	G	Miss D. Mack
10 Jul	Newbattle to Lothian Bridge	B	Mrs. M. White
17 Jul	Cammo Park, Barnton	T	Mrs. M. White
24 Jul	Shore Walk, South Queensferry	BS	Mrs. M. Robertson
31 Jul	Blackridge Railway Line	B	Mr. D. Adamson
14 Aug	Galachlaw	F	Mrs. E. Farquharson
21 Aug	Craigie Wood, West Lothian	F	Mrs. E.McA. Smith

Evening Study Sessions

1 May	Library Evening	Mrs. F. Dunn
8 May	Grasses	Mr. G. Swift
13 May	Basic Botany I	Miss J. Muscott
20 May	Basic Botany II	Miss J. Muscott
22 Jul	Fungi: Introduction for Beginners	Miss M. Mitchell
29 Jul	Fungi: Basic Lab Work	Mrs. E. Farquharson
19 Aug	Fungi: Practical Work	Mrs. Eunice Smith

REPORTS AND ABSTRACTS FROM REPORTS

Abbey St. Bathans – 20 April

This was the last of the winter excursions and a chance to see the Abbey St. Bathans area much earlier in the year than in any recent visits by the Society. The weather was rather chilly and windy, but not unpleasant for a good walk, and we had covered about six miles before returning to the trout farm. Our planned start along the Whiteadder riverbank was thwarted by the old path being completely blocked by fallen trees and debris from gale damage in recent winters, so we kept to the road as far as "Toot" Corner, finding along the banks both early spring flowers – Primrose (*Primula vulgaris*), Celandine (*Ranunculus ficara*), Wood-sorrel (*Oxalis acetosella*) – and signs of summer flowers to come, such as Foxglove (*Digitalis purpurea*), Leopard's Bane (*Doronicum pardalianches*) and tuberous Comfrey (*Symphytum tuberosum*). Once across the Ellerburn and its wooded dean, where we noticed a very large Dryad's Saddle fungus, rather brisker walking took us up to the heather-line on the open shoulder of Cockburn Law, from which we made our way to Edin's Hall Broch. We examined with interest this well-preserved base of a typical circular tower rarely found so far south in Scotland, with cell-like rooms and stairways built within the walls. From here we dropped down to the valley floor again, passing the ancient Birch/Alder area known as Wildwood, and along the Whiteadder bank to the rocky gorge and bridge at Elba. Near here we found a widespread colony of Moschatel (*Adoxa moschatellina*), the inconspicuous but unmistakable "Town Hall Clock" flower which was a first sighting for some members of our group. We noted, but did not explore, the narrow entrances of the old copper mines at Elba, preferring to press on to our lunch-spot in a conifer wood where the litter of stripped spruce cones indicated, we decided, the presence of both Red Squirrels and Crossbills. Homeward, paths via the Retreat led us through forestry plantations, clear-felled areas, mixed woodland where the early blossom of the Red-berried Elder (*Sambucus racemosa*) was conspicuous, and estate parkland notable for some fine specimen trees, including cedars, chestnuts and very ancient Silver Fir (*Abies alba*). At one point where we again skirted the river, the corpse of a fox was found near the waterline, but the powerful odour precluded any close examination!

In these cool, windy conditions, sightings of the smaller birds were not numerous, though we had a fair list of the commoner ones by the end of the day. Chiff-chaff and Willow-warbler were the only spring migrants noted; we watched a Dunnock nest building near the sawmill; both Green- and Great-spotted Woodpeckers were heard, but not seen, and a Siskin was spotted by some of the party. Unusually for this area, we saw no raptors at all.

The plant list totalled 177 species; 28 lichens were identified at the Broch and the Wildwood, including two ancient woodland indicator species growing on Ash.

Margaret Watson

Vogrie Country Park – 27 April

A substantial party of members met at the car-park (NT 362647) where David Jones, our leader, took us around various ponds and talked about the freshwater flora and fauna. As usual the botanists became detached early on and saw very little of the action.

A list of 124 plants was recorded, the highlights being *Crassula helmsii* and Curly Water-thyme (*Lagarosiphon major*) found in a pond, and Wood Goldilocks (*Ranunculus auricomus*) and Herb Paris (*Paris quadrifolia*) appearing in some woodlands. Needless to say, the Paris caused great excitement, as the botanists had no idea that it grew in the area. Eventually, though, it was discovered that people "in the know", knew all about it, but were just keeping it quiet.

John Winham

Pepper Wood Work Party – 4 May

A further onslaught on the White Butterbur of Pepper Wood was made by a group of about a dozen as a follow-up to the work done on the excursion in May 1990 and by our leader, George McDougall, and friends throughout the year. A busy morning produced piles of butterbur and the threat to the wild flowers of the wood must have been considerably reduced. The recently formed Queensferry and Kirkliston Wildlife Group are to continue the butterbur clearance in future so that the "gardening section" of the Society will be looking for fresh fields in 1992.

Our labours over, we were taken on a tour of the more interesting wild flowers of the wood to round off the morning. A happy afternoon was spent plant hunting on the nearby Kirkliston/Dalmeny disused railway line in beautiful sunny conditions.

Among the more interesting plants of the railway line, we saw Plantain Leopard's Bane (*Doronicum plantagineum*), naturalised here and there, Henbit (*Lamium amplexicaule*) and a few patches of Three-veined Sandwort (*Moehringia trinervia*). *Doronicum pardalianches* and *D. plantagineum* are both in Pepper Wood; it is interesting that it is the rarer species which has established itself on the railway embankment.

Mary Clarkson

Inchcailloch – 11 May

A group of 22 left by coach from Donaldson's School heading for Balmaha. There they were joined by others and by Ian McCallum who was to lead the party round the nature trail. There was a short boat crossing on Loch Lomond to Inchcailloch – the island of the cowled or old woman. It was a warm, sunny morning of singing Warblers.

The nature trail starts at North Bay leading up a steep path through Oak Woodland. From here most of the party turned left across the stream and followed a wooden walkway to the Alder Tree Marsh. The others continued straight on through the Central Valley making a short detour to visit the Buchanan Parish burial ground which contains the ruins of a 13th century church dedicated to St. Kentigerne.

From the marsh the trail led upwards but the climb was lightened by bird song, by glimpses of wild flowers and by the sight of the tiny island, Kitchen, thought to be a crannog built about 2,000 years ago by lake dwellers. The summit is about 75 metres above the level of the loch and in the clear air there was a beautiful view northward. Then there was a descent through pinewoods and lunch for the whole party on the sandy beach at Port Bawn.

Inchcailloch lies on the line of the Highland Boundary Fault; a ridge of conglomerate sandstone and a separate ridge of serpentine are associated with this fault. The trail led round the west coast of the island and there was an abrupt change in vegetation as it passed from the sandstone soil to the more alkaline soil derived from the serpentine.

Although it is 200 years since people lived on the island there were traces of their habitation – ridges and furrows of once cultivated land, the remains of a corn-drying kiln and the ruins of a farm. From about 1770 the woodland was managed for the production of oak bark used in tanning. Vinegar, wood tar and dye-stuffs were obtained by wood distillation at works in Balmaha. By the end of the last century these industries had become uneconomic.

The boat trip back ended a most enjoyable outing and we should like to thank Ian McCallum who pointed out so much of interest on the trail.

Margaret White

Humbie Wood, Humbie, East Lothian – 18 May – Part I

A group of 21 members met at Humbie Church. We set out through the southern end of Humbie Wood where the usual woodland flowers were seen. Shredded pine cones on the ground gave evidence of Crossbill feeding. None was seen feeding on this occasion but flocks were seen in flight.

The next section of the walk was along farm roads and the verges were in places abundant with Stitchwort, Forget-me-not and Campion. About a mile of the old Gifford railway was followed and was most notable for the large numbers of Primrose. Lunch was taken by the remains of the rail bridge over the Humbie Water. Roe Deer watched from the safety of the opposite bank.

The northern end of Humbie Wood was entered but progress was impeded by close conifer plantations. A diversion was required before a final stretch of old established, largely deciduous woodland brought us back to the church.

Duncan Gill

Humbie Wood – Part II

There are always some people who manage to get detached from the main party. It doesn't take a minute. You only have to stop to look at a particularly interesting plant, or take a photograph, and when you look up, the rest of the party, sometimes 20 or 30 strong, has vanished into thin air.

Thus three of us had a completely different meeting on 18 May. We started off from the same place, at the same time, but arrived back considerably later. Our rather more adventurous trip included fording the river at the defunct railway bridge where everyone else apparently had lunch, and descending a precipitous slope through somebody's back garden in an effort to get back onto the road at the end of the day.

We did not see the deer, though we noted their tracks and the damage they had done cleaning their velvet and marking territory. We also noted a number of rosettes of Lesser Wintergreen (*Pyrola minor*) which according to the East Lothian Checklist is known from only three sites in the vice-county. Other, less common plants in the same area (the wood by the old railway line) included Agrimony (*Agrimonia eupatoria*) and Enchanter's Nightshade (*Circaea lutetiana*). We also found several patches of Common Centaury (*Centaurium erythraea*) when we sat down to lunch at the point where the old railway runs along the wood edge.

In fact the plant list reached 200 species which is very good, and we three strays had a very pleasant day – even if one of us had a little peace-making to do with a spouse who had had a very long wait.

Jackie Muscott

Erraid Wood SWT Reserve – 22 May

Erraid Wood is an SWT reserve on the edge of the Pentland Hills just beyond Hillend. It is mixed woodland. The mature trees such as Beech are over 150 years old. New trees are being planted of the native species such as Scots Pine, and also Oak. These have to be protected from rabbits and Roe Deer.

Nesting boxes have been used in previous years by the Tawny Owl; this year a Grey Squirrel seems to be established in one owl box though the owl was seen elsewhere on the reserve. In the "wood shed" a Blackbird was on her second brood and a Wren was sitting on eggs close at hand. From the top of the reserve splendid views can be enjoyed over the city and its environs.

Molly Woolgar

Falls of Clyde SWT Reserve – 25 May

The Falls of Clyde Reserve is about 70 hectares in area and stretches for nearly two miles along the River Clyde from New Lanark in the north to Bonnington Weir and Tullyford in the south. In 1927 the first public hydro-electric scheme in Scotland was opened here and, unfortunately, this removes virtually all the water from the Falls in the summer months. An agreement ensures that on four days in the year the power station is closed down to allow a normal flow of water and so the spectacle of the Falls that so enthralled the Victorians can still be seen. The rocks which underlie the reserve are sandstones laid down in Devonian times around 400 million years ago and they are very obvious in the steep sides of the gorge. Here, many small plants, including Purple Saxifrage (*Saxifraga oppositifolia*) survive on narrow ledges and in crevices.

Our party assembled in New Lanark to be met by the Ranger, John Darbyshire. Before setting off he described the different habitats we would see in the reserve. Three members undertook the recording of plants, moving more slowly than the others, and achieving a list of 207 species. A copy of this has been sent to the reserve. The remainder of the party spent the morning with the ranger moving through various habitats to Corra Linn. This was a most interesting walk through deciduous woodland, coniferous woodland, marsh, land where draining had just ceased and open ground where trees had been felled and where a growth of shrubs and small trees provided cover for Warblers and other birds. We saw several bird boxes and bat boxes on our way.

The ranger told us that work had already begun to replace planted conifers with oak and that there were plans to remove Lime, Sycamore and Beech, none of which is native to Scotland. The dead branches and trunks of previously felled conifers were being removed to allow regeneration of ground flora. We found it especially encouraging to hear of his constructive work with young groups in the reserve. We were shown a viewpoint for Badgers and heard that food containing coloured markers is left for them, enabling movements and family groups to be studied. Foxes are found both in the reserve and by the river above the weir.

After lunch the party split up into smaller groups, meeting up later at New Lanark. We are most grateful to John Darbyshire for the time and the trouble he took to show us the reserve and to give us so much information about the work taking place there.

Some of the nicer plant finds were Wood Melick (*Melica uniflora*), Common Wintergreen (*Pyrola minor*), Meadow Saxifrage (*Saxifraga granulata*) and Globe Flower (*Trollius europaeus*).

Margaret White

Pepper Wood, Kirkliston – 29 May

Twenty-one members met at Dalmeny and drove on to Pepper Wood, where Joe Carlyle showed us the more unusual plants including: Wood Goldilocks (*Ranunculus auricomus*), Wild Tulip (*Tulipa sylvestris*), May Lily (*Maianthemum bifolium*), Perfoliate Honeysuckle (*Lonicera caprifolium*) and Climbing Corydalis (*Corydalis claviculata*). Having completed the botanical observations, the party continued to a new ENHS venue – Pike's Pool – an artificial pond supplying water to Kirkliston Distillery. Not much botanical interest was evident here.

John Winham

Acharn, Loch Tay – 1 June

The village of Kenmore lies at the eastern end of Loch Tay in a rich setting of hills where the River Tay issues from the loch. Here, a small party, having come by coach, met the leader and those who had travelled by car.

It was a lovely, sunny day. We walked for a short distance along the south shore of the loch. The water was clear and still beside which there was a bright patch of Globe Flower (*Trollius europaeus*) with Bladder Sedge (*Carex vesicaria*) growing alongside.

Leaving the loch side, we took the steep (1:4) minor road which leads south over the hills to Amulree. The banks on either side were covered with wild flowers under overhanging birch trees, a veritable feast for the botanists who found Twayblade (*Listera ovata*). The trees gave way to open moorland and a track led south-west along the hillside. The view was magnificent, Ben Lawers dominated the far side of the loch and Schiehallion could be seen in the distance. Down below, Taymouth Castle, seat of the Earls of Breadalbane, could be seen, set in spacious grounds. Up on a hillside, at a wet flush there was deep purple Butterwort (*Pinguicula vulgaris*), several shades – blue, pink and white – of Milkwort (*Polygala vulgaris*) and many sedges (*Carex flacca, panicea, caryophyllea* and *pulicaris*).

At the lunch stop we nearly trod on Moonwort (*Botrychium lunaria*). Other finds nearby were Northern Marsh Orchid (*Dactylorhiza purpurella*), Alpine Bistort (*Polygonum viviparum*) and Lesser Clubmoss (*Selaginella selaginoides*).

Leaving the track and going further up the hillside we were shown a large rock incised with many cup and ring marks. On regaining the track we passed Mountain Everlasting (*Antennaria dioica*) and a Small Tortoiseshell butterfly passed us.

After about three miles we came to the Acharn Burn which tumbles down the hill in a dramatic waterfall called The Falls of Acharn. John Campbell, Third Earl of Breadalbane, created a viewpoint overlooking the falls. It has recently been restored and from here we had a magnificent view of the cascade.

From there it was only a short, downhill walk to Acharn village and our waiting coach.

Joan Lyburn

Leith Docks – 5 June

This outing was primarily planned to look for unusual plants, with special emphasis on alien species. A party of ten appeared, to grapple with the botanical peculiarities of the area. A total of 109 species was recorded. As usual the botanists were left behind early on. Plants of interest included: *Amsinckia* sp., Bur Chervil (*Anthriscus caucalis*), Hoary Pepperwort (*Cardaria draba*), Welted Thistle (*Carduus acanthoides*) and Hemlock (*Conium maculatum*). Two unusual grasses were seen: Squirrel-tail Fescue (*Vulpia bromoides*) and Great Brome (*Bromus diandrus*). Several garden escapes and one crop plant were seen.

John Winham

Barns Ness – 8 June

The group dispersed after a short, interesting introduction from the Ranger, Victor Lough, who pinpointed one or two geological features and told us of two unusual birds – Richard's Pipit and Hobby – which had been in the area during spring.

One or two set off along the coast outpacing a second group which stopped to look at the waders, such as Ringed Plover and Turnstone, a few colourful patches of Purple Milk-vetch and Bird's-foot Trefoil and the geological feature – an ammonite at least six inches in diameter in the rock close to the lighthouse. A third group proceeded very slowly, heads down, examining and identifying each botanical species systematically. Each group enjoyed itself in its own way. Lunch was taken at various points close to or further away from the lighthouse.

There were three botanical habitats to explore: coastal grassland, salt marsh and sand dunes. A total of 132 plants was recorded, the more notable being Thyme-leaved Sandwort (*Arenaria serpyllifolia*), Purple Milk-vetch (*Astragalus danicus*), Slender Thistle (*Carduus tenuiflorus*), Fern Grass (*Catapodium rigidum*), the two Mouse-ear Chickweeds (*Cerastium diffusum* and *C. semidecandrum*), White Horehound (*Marrubium vulgare*) and Field Madder (*Sherardia arvensis*).

Molly Woolgar

Gullane Dunes – 13 June – Joint outing with SWT East Lothian Support Group

Gale force winds and torrential rain were braved by a very small party indeed, two SWT members, two ENHS members and three East Lothian coastal rangers. The route was a circular one and covered, not only the more usual "bents", where typical flowers and shrubs of this habitat were seen, but also sandy and marshy areas where there was a more specialised vegetation. Those who braved the elements had a most rewarding evening, for, as well as showing us the plants, the leader also provided us with titbits of information about their uses and about the origins of their names. Did you know, for example, that Centaury (*Centaurea erythraea*) was said to be used in medicine by the Centaurs of Greek mythology – or that Bladder Campion (*Silene vulgaris*) was an aphrodisiac for cattle in Scotland?

Mary Clarkson

Deeside Weekend – 14–16 June

Nineteen members spent a weekend based at Dinnet in Aberdeenshire as a follow-up to the very interesting talk given to us in March by Eric Baird, the Countryside Ranger at Glen Tanar. The reserves at Glen Tanar and Muir of Dinnet were visited by the party and smaller groups also went to Glen Muick and Coulnacraig Meadow. Accounts follow for each day's outing.

Mary Clarkson

Glen Tanar

After a delightful journey from the visitor car park and a pleasant walk to the viewpoint above it, we were rewarded with a superb panoramic view up and down the glen under a clear sky. As we neared the top, some aspects of land management were illustrated – the difference between grazed and ungrazed land and how the removal of browsing pressure caused previously suppressed Birch to appear. Other trees we noticed en route were Oak, Aspen and Juniper in various shapes and sizes. The nature of the browsing had given rise to a variety of grasses. Plants seen included Tormentil (*Potentilla erecta*), Lousewort (*Pedicularis sylvatica*), Milkwort (*Polygala serpyllifolia*), Heath Bedstraw (*Galium saxatile*), Bird's-foot Trefoil (*Lotus corniculatus*) and Eyebright (*Euphrasia officinalis* agg.).

From this viewpoint, we could see in the distance heath that had been burned for Red Grouse management, tree regeneration (Silver Birch) in areas where there had been forest fires, and mixed forest plantings. The estate land is used for beef cattle, forestry and game. The landscape partly reflects the forester's interest in propagating birch – they are of commercial value – and native conifers. Some history now. In 1869, an MP and banker acquired the estate and transformed it from one based on subsistence agriculture backed by forestry to a pleasure park. The tenants were cleared by failing to renew their leases. The new owner, Cunliffe-Brooks, was an absentee landlord who erected verse-inscribed monuments to himself. He piped or channelled the springs on the estate, and fenced in a herd of Red Deer which prevented regeneration until the 1930s, when the new owner, Coats, fenced them out again, allowing the vegetation to recover. Amongst the plants spotted on the way down were Heath Speedwell (*Veronica officinalis*), Rock Rose (*Helianthemum nummularium*), Marsh Thistle (*Cirsium palustre*), Bugle (*Ajuga reptans*), Common Spotted Orchid (*Dactylorhiza fuchsii*), Wood Anemone (*Anemone nemorosa*), Chickweed Wintergreen (*Trientalis europaea*) and Horsetail (*Equisetum* sp.).

On arrival at the visitor centre, beside the Water of Tanar, chirping sounds betrayed the existence of an unusual nesting site – a hollow round metal gatepost. At the beginning of the next stage of the walk, Alders lined the riverbank and there were indications that previously there had been a mill lade. Nearby, there was a chapel, built in 1872, in the vicinity of which there had been a hamlet, consisting of 15 houses, a general merchant store, an inn, a meal mill and a shoemakers. Its existence depended on the Firmounth Drove Road, but by the end of the 18th century trade had declined and by the end of the 19th century the village was in ruins.

The gentle rightwards sweep of the track up the slope promised still more interest. In an area where there had been war-time tree felling, followed by replanting in 1953, there could be seen Scots Pine, Larch, Spruce and broadleaved trees. Birch seedlings had been planted in the hope of counteracting the acidity of the soil. Whilst walking through the forest we were given further insights into land management: how it involved creating space and light for insects, birds and important trees; forming interesting features, such as lines of sight through the trees; and viewpoints. We passed deliberately planted Norway Maple (*Acer platanoides*). The nature of the soil – podsol – was evident at one point, where all the layers were exposed. The type of soil is characterised by the leaching of minerals – iron, aluminium, etc. – out of the surface layer by water into layers below, which become thick and hard. Pine needles deposit acid and the soil is poor in nutrients.

Suddenly, we came out of the forest at the viewpoint, with magnificent views ahead of us; range upon range of forest covered mountains above the rivers below. Further round, the wide, undulating moorland stretched away from us. Our lunch at the viewpoint was rudely interrupted by torrential rain, which stayed with us until the furthest point of our walk up the valley.

Most of the party proceeded down the steep track in open country to the Water of Tanar. Here we came across one of the many wells erected by the 19th–20th century owner of the estate. 1874 was inscribed upon it. Every curve of the track was an adventure as we progressed up the valley, along the boundary between the open ground and the forest, and then into the depths of the forest itself. Just past a solitary Lime tree between the track and the river, the party split again, some returning to join those who had left earlier in order to visit Glen Muick.

By this time, we had left the Water of Tanar and were now following the Water of Allaony which, at some places, had eaten into the bank. The fascination of the walk continued with each turn and rise in the track and each direction the river took. Having walked some distance up the valley, the time came to make our way back by turning up a steep track to gain the open country above the forest, where we joined the Firmounth Drove Road. On the way, the surrounding mountains showed through the mist to give a sense of mystery. Passing a small reservoir on the Burn of Skinna, created to aid fire fighting, we reached an area where replanting was taking place, due to the forest fire of 1956. This had burnt for 12 days and followed a previous fire of 1920. The trees planted were: Rowan, Birch, Alder, Bird Cherry and Gean. Now came the highlight of the walk – a Merlin perched on a dead tree. It was really spectacular. Fortunately by now the weather was once more dry. Between this location and the viewpoint where we had had our lunch earlier there were countless burnt trees, remnants of the latest forest fire.

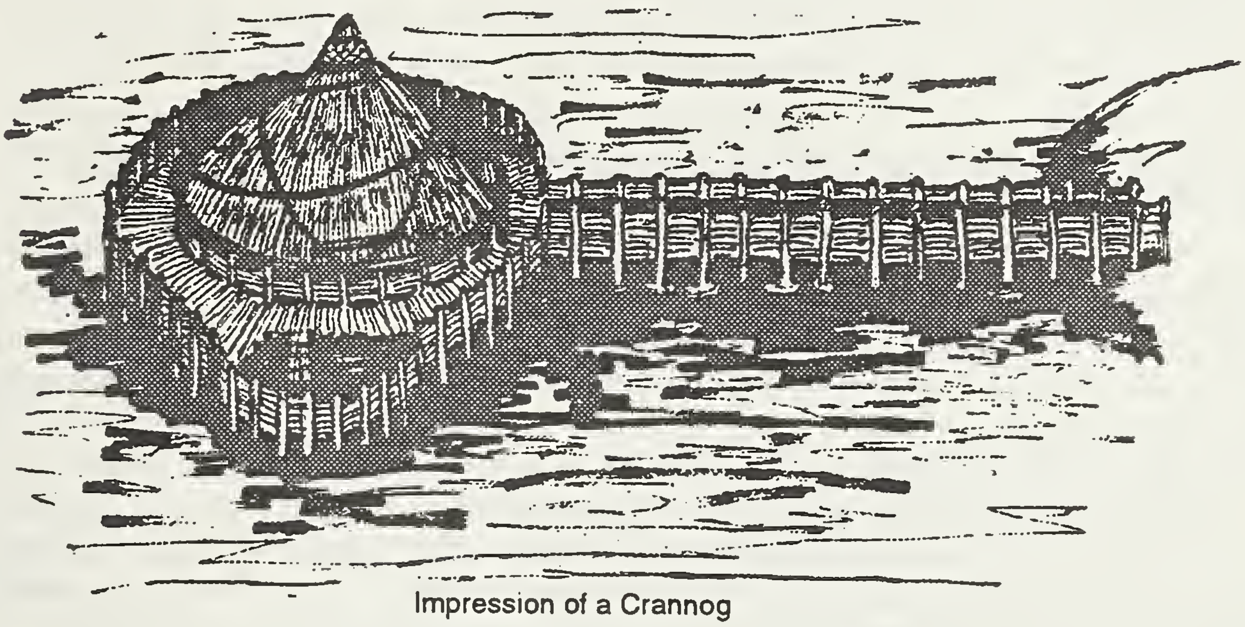
Once we had reached the viewpoint, an exhilarating ride in the ranger's Land Rover down the steep, twisty track brought us back to the visitor centre car park. On the way the vehicle skirted a very picturesque lochan quite near the big house and passed several estate buildings with their distinctive architecture.

Roddy Clark

Muir of Dinnet

On Sunday, 16 June we had arranged to visit Muir of Dinnet Nature Reserve. The morning was to be spent exploring the section in which the Burn o' Vat is situated. On arrival at the visitor centre we learned that the warden had been delayed due to poachers on one of the lochs on the reserve. Claire, from Aberdeen, who deputised for him, was a very knowledgeable guide.

First we went inside and heard something of the general formation and geology of the area which was declared a reserve in 1977 and in which there is now a great variety of wildlife – 150 species of birds, over 420 moths, around 160 vascular plants and many mosses, lichens and fungi. There is evidence of much progress since 1977 in the restoration and regeneration of trees, such as Silver Birch (*Betula pendula*), Rowan (*Sorbus aucuparia*), Aspen (*Populus tremula*) and Alder (*Alnus glutinosa*), with Willow (*Salix* sp.) in the wetter areas. Scots Pine (*Pinus sylvestris*) is seen higher in the hills and there are stands of Juniper (*Juniperis communis*), Gorse (*Ulex europaeus*), Broom (*Cytisus scoparia*) and Hazel (*Corylus avellana*) scrub.



Impression of a Crannog

We proceeded along the trail to the first viewpoint looking over to Lochs Kinord and Davan. These lochs have glacial features known as "kettle holes". They were formed about 12,000 years ago when large masses of ice became detached from the main ice sheet. Eventually these ice masses melted, leaving depressions in the drift which covered them. On Loch Kinord there is an island (Castle Island) where Malcolm Canmore, who ruled Scotland from 1058—1093, built a hunting lodge, which later came into the possession of the Marquis of Huntly but was demolished in 1648. Also on this loch is a crannog. It was explained to us that this was a small, circular timber-framed thatched hut about 16 metres in diameter, built on an artificial island, created from wooden piles and brushwood, near the edge of the loch. The crannog was joined to the mainland by a wooden causeway. Crannogs were built in the Iron Age (approximately 700 BC to 1st century AD) and occupied into the Roman and sometimes to the Medieval period (1066—1500 AD). It is not quite certain as to what use they were put — was it a home for the family, the animals, a retreat in time of danger, or what? Perhaps a second home!

Loch Davan, as the name and other circumstances suggest, may have been the site of the Roman Devana as there have been many valuable finds of bronze, iron and timber. Among the latter were oak piles of a crannog, a drawbridge and several canoes. At one time there was a beautiful little museum nearby but unfortunately this and the contents no longer exist.

Continuing along the path (well constructed with wooden slats and steps) we came to a clearing in the trees where many wild flowers were found — Perforate St. John's Wort (*Hypericum perforatum*), Bugle (*Ajuga reptans*), Chickweed Wintergreen (*Trientalis europaea*), Milkwort (*Polygala vulgaris*), Petty Whin (*Genista anglica*), Bog Asphodel (*Narthecium ossifragum*), Tormentil (*Potentilla erecta*), Wood Sage (*Teucrium scorodonia*), Butterwort (*Pinguicula vulgaris*), Sundew (*Drosera rotundifolia*) and many clumps of Bell Heather (*Erica cinerea*) and Wood-rush (*Luzula* sp.). Only one Coal Tit was seen and heard here and it was a disappointment to many of us not to see a Crossbill or Capercaillie in the pine woods.

Descending from this clearing in the woods we continued along the path to the entrance of the Vat, sometimes also known as "MacGregor's Cave". This is an outstanding feature in the area, also formed after the last Ice Age. As the ice melted from the surrounding higher hills, streams were formed, pushing forward huge boulders, swirling and grinding in the meltwater on their relentless passage to lower ground. At Burn o' Vat there is now an open cave some hundred feet high where evidence can be seen of the action of these boulders. Saplings have taken root and plants, such as Hard Fern (*Blechnum spicant*) and Golden Saxifrage (*Chrysosplenium oppositifolium*) were found at ground level. Later the warden told us that Beech-fern (*Phegopteris connectilis*) also grows there.

Gaining entry to the Vat itself required a bit of caution and good balance and it was pointed out to me that one of our lady members resembled "a green-wellied St. Christopher" helping other travellers on their way!

Coming out again into the open we followed a lovely clear "whisky-coloured" stream from the Vat to the car park.

As our time was so limited it was not possible to diversify or study in depth. But there was great scope for botanists, mycologists, geologists and entomologists — something for everyone interested in natural history. A very happy morning!

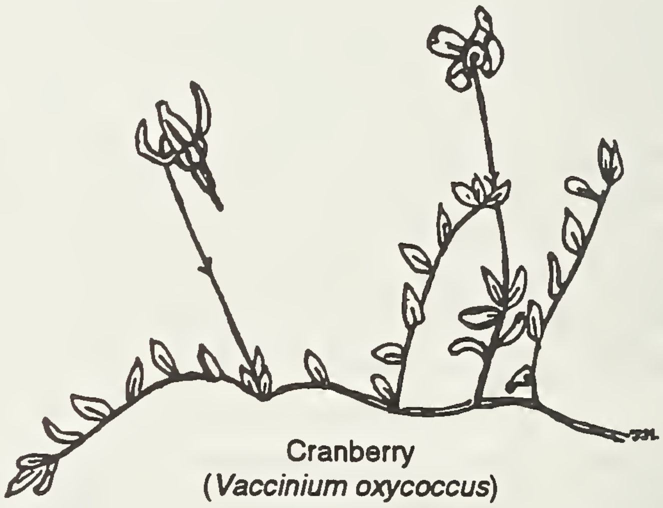
Anne Davidson

Gore Glen, Arniston — 19 June

A small party met at the car park on the north side of Shank Bridge. The car park area was thoroughly botanised before moving off up-river. The woods and riverbanks were scoured for plants, various people becoming detached from the party. One hundred and eleven plants were recorded; those of particular interest being Sand-spurrey (*Spergularia rubra*) in the car park, with Common Wintergreen (*Pyrola minor*), Common Spotted Orchid (*Dactylorhiza fuchsii*) and Pendulous Sedge (*Carex pendula*) elsewhere.

John Winham

Blawhorn Moss, West Lothian — 22 June


Cranberry
(*Vaccinium oxycoccus*)

Blawhorn Moss is a National Nature Reserve some two miles north-west of the village of Blackridge, West Lothian. It consists of a raised bog with blanket bog characteristics, a habitat now rare in Central Scotland. The area was drained earlier this century to encourage grazing, and the Nature Conservancy Council has incurred much expense in trying to repair this damage. The smaller drainage channels have now been dammed by corrugated metal sheets, spaced evenly along their lengths. Attempts to block the larger channels where peat erosion is more serious have had only limited success; the water has eaten under and around the large wooden barriers designed to check its progress. Despite this, these channels are now recolonised by Cotton Grass (*Eriophorum vaginatum*) and Mosses (*Sphagnum* sp.). Vandalism, particularly by fire, destroys the peat-forming mosses and sets back the work of the NCC.

Between 40 and 50 species of vascular plants have been recorded in the reserve, the dominants being Ling (*Calluna vulgaris*), Crowberry (*Empetrum nigrum*), Cross-leaved Heath (*Erica tetralix*) and Cotton Grasses (*Eriophorum* sp.); local rarities include Cranberry (*Vaccinium oxycoccus*), Heath Spotted orchid (*Dactylorhiza maculata* subsp. *ericetorum*) and Round-leaved Sundew (*Drosera rotundifolia*).

Visited on a warm, clear evening with the Campsies, Highlands and Ochils forming an unbroken northern hillscape, and cumulus clouds towering in the southern sky, the moss has character and charm. Those attending were fortunate to enjoy such conditions and privileged to be led by the warden, Mr. Andrew Panter. He described the processes which led to the formation of raised bogs and the problems of management of this particular reserve. He was, however, unable to prevent almost everyone from stumbling into some ditch or pool so that wet feet became the order of the day. Perhaps this shows that the attempts to restore the raised bog are succeeding.

David Adamson

Spottiswoode, near Westruther, Berwickshire – 29 June

Sunshine, after days of dull skies and rain, encouraged a record number of 37 members to congregate at Dod's Mill, before going in convoy to Spottiswoode Estate. This was once the home of Lady John Scott who composed the music for the song "Annie Laurie".

We covered a very varied number of habitats including deciduous woodland, an overgrown walled garden with an orchard, the garden of a private house, with the evocative name of Whaup's Whirr whose owners showed us round with evident pleasure. Also, a woodland track, a field full of curious bullocks who wanted to share our lunch, and finally moorland, returning by a grass track beside the Bruntaburn, which soon became a tarmac road leading back to the estate. Up on the moor there were several splendid old Beech trees beside some ruined detached cottages of good size as Lady John Scott was ahead of her time in realising that good living conditions led to better health and increased productivity on the estate.

The predominating colours of the day were blue and yellow. Blue from a large clump of Bugle (*Ajuga reptans*), from blue Germander Speedwell (*Veronica chamaedrys*) in the grass verges, Forget-me-nots (*Myosotis* – several varieties) and a few lingering Bluebells (*Hyacinthus* sp.).

The yellows included Crosswort (*Galium cruciata*) in full flower, Herb Bennet (*Geum urbanum*), Tormentil (*Potentilla erecta*), Welsh Poppy (*Meconopsis cambrica*), Broom (*Cytisus scoparius*), Yellow Pimpernel (*Lysimachia nemorum*), Creeping Jenny (*L. nummularia*), Dandelions (*Taraxacum* sp.), Yellow Figwort (*Scrophularia vernalis*) and masses of Lesser Trefoil (*Trifolium dubium*).

Items of particular note were Royal Fern (*Osmunda regalis*) growing in the garden of Whaup's Whirr, a Walnut tree (*Juglans regia*) in the old orchard and Guelder Rose (*Viburnum opulus*) at the garden wall. Early in the day, two Buzzards flew overhead.

There was no way that such a large group could keep together and the leader had his work cut out just keeping us on the prescribed route. Nonetheless, a most enjoyable day was had by everyone, each indulging in his or her own special interest, be it flowers, birds, fungi or spiders – there was so much to see. Lady John Scott, who was a keen naturalist, would have been very pleased with the visit of the Edinburgh Natural History Society. Final plant list 133 spp.

Joan Lyburn

Hillend, Swanston – 3 July

Surprisingly, five members turned out for this walk on an evening of thick fog and showers. On the hill, visibility was no more than 20 yards so the note of birds seen/heard consisted of a grounded, ringed Pigeon, a ghostly member of the Crow family seen flapping by in the mist and the calling of a Yellowhammer somewhere in the Whin bushes.

However, the weather didn't hamper the search for plants and 30 common species of hill and verge were recorded.

This is a very pleasant walk on a fine evening so perhaps we shall try again.

Doris Mack

Longnewton Railway Cutting – 6 July

It was exactly 16 years ago that Dr. Roderick Corner and I first examined the banks and track here. While the Waverley line was in use, this area was not available, and we were delighted at the floral display, particularly the discovery of Pyramidal Orchids (*Anacamptis pyramidalis*) whose distribution is sparse and coastal in Scotland. My theory is that they came by train as did Rusty-back Fern (*Ceterach officinarum*) which grows at Hawick and grew on the platform at Newcastleton until redevelopment.

ENHS was here in 1986, a late season, when few orchids were seen; this time we found five Pyramidal including one splendid specimen on ballast on Ale bridge.

The banks are being rapidly invaded by Hawthorn, Blackthorn, Whin, Dog Rose and coarse grasses, despite efforts of SWT Central Border Support Group who have worked hard on three occasions to cut them back during the winter. While the railway was in use, growth was kept in check by occasional burning; now there is obvious deterioration of what was virtually old grassland.

Twayblade (*Listera ovata*) was in abundance with a few Spotted Orchids (*Dactylorhiza fuchsii*), but no Fragrant Orchids (*Gymnadenia conopsea*) yet, or Centaury (*Centaurium erythraea*) or Pepper Saxifrage (*Silaum silaus*), which have been found here. Small Toadflax (*Chaenorrhinum minus*), which is almost exclusively on railway tracks, was spotted by Mrs. M. Little.

Large patches of Mouse-ear Hawkweed (*Hieracium pilosella*) were notable, some lacking the red colour below, and Black Medick (*Medicago lupulina*) was present in masses.

Male Common Blue butterflies were common, and the first female of the year, with Ringlets and Meadow Browns were seen. Latticed Heath moth was captured, but we were too early for Six-spot Burnets which occur here.

It was a rare, sunny day enjoyed by the company of 15 members.

Arthur Smith

Yellowcraig – 13 July

The visit to Yellowcraig was a joint outing with Dundee Naturalists' Society. The venue had to be switched at the eleventh hour from Ormiston, where part of the intended route had become overgrown, and so it was almost noon when the party set off.

We were fortunate that our leader, Heather McHaffie, is interested in geology as well as botany. From the summit of the Yellow Craig, itself the core of an ancient volcano, there was a fine view and Heather pointed out to us the main geological features, the raised beach, volcanic vents, lava flows, intruded basalt sill and outcrops of vent agglomerate.

The agglomerate outcrops form natural rock gardens and the botanists had a happy time plant hunting on these and in the dune pasture around. Purple Milk Vetch (*Astragalus danicus*), Knotted Pearlwort (*Sagina nodosa*) and Common Centaury (*Centaurium erythraea*) were among the plants found. Our leader knew that Moonwort (*Botrychium lunaria*) grew in the area and we were all crawling around on hands and knees looking for – and finding – three specimens, very tiny in the short seaside turf. Near the corner of the plantation we found Marjoram (*Origanum vulgare*), Lesser Twayblade (*Listera cordata*) and Early Marsh Orchid (*Dactylorhiza incarnata*), and in the dunes, Scots Lovage (*Ligusticum scoticum*), Blue Fleabane (*Erigeron acer*) and Spring Vetch (*Vicia lathyroides*).

Walking westwards along the shore we were shown lava flows, areas of basalt and of agglomerate. Here the ornithologists were able to watch Terns and Gannets diving for fish offshore, Cormorants hanging their wings out to dry, and Ringed Plover, Redshanks and Oystercatchers on the tideline.

We were reluctant to leave this beautiful and interesting area which we had visited in ideal conditions.

Mary Clarkson

Tay Marshes, Friarton Bridge, Perthshire – 20 July

Twenty-six members, under the guidance of John Winham, gathered for this excursion to the north bank of the River Tay just south of Perth. The morning was cloudy, warm and humid but from lunchtime we enjoyed glorious sunshine.

The rough grassland and marshy areas of the bank were rich in plants and many species were noted, including Blue Sow-thistle (*Cicerbita macrophylla*), Tansy (*Tanacetum vulgare*), Weld (*Reseda luteola*), Sand Leek (*Allium scorodoprasum*), Marjoram (*Origanum vulgare*) and Great Lettuce (*Lactuca virosa*). Some fine, tall Cabbage Thistles (*Cirsium oleraceum*) were found, and Great Mullein (*Verbascum thapsus*). In the wetter areas, Marsh Woundwort (*Stachys palustris*), Marsh Ragwort (*Senecio aquaticus*) and Ragged-Robin (*Lychnis flos-cuculi*) grew. An investigation into a thickly overgrown area of scrub and ditch produced a vigorous growth of Sensitive Fern (*Onoclea sensibilis*), also Water Horsetail (*Equisetum fluviatile*), Water-plantain (*Alisma plantago-aquatica*) and Branched Bur-reed (*Sparganium erectum*) among others.

Some of the birds seen and heard were Buzzard, Sparrowhawk, Greenfinch and Goldfinch, Reed Bunting and Oystercatcher. A young Peregrine Falcon was heard calling and it was spotted standing at the side of the nearby railway line. The passage of a train at a fair speed failed to budge it and it continued to sit by the track, calling, until it eventually flew off to a perch beneath the road bridge, where we left it.

A Yellow Shell Moth was captured and examined. Meadow Brown and Ringlet butterflies were seen and we also found some caterpillars of the Small Tortoiseshell butterfly.

The day spent in this small but rich area was most enjoyable and interesting. A total of 82 species of plants was seen.

Doris Mack

South Queensferry – 24 July

Because it was high tide and the shore, in any event, strewn with large boulders from a long demolished seawall, the 14 members present were persuaded to change the advertised Society shore walk, South Queensferry, to an exploration of the land under the Forth Road Bridge, where it is proposed to drive a road through to Port Edgar marina and construct office buildings.

On a fine, sunny evening we had lovely views across the Forth to the hills beyond. We found an unexpectedly rich flora, several butterflies and an excellent habitat for various birds – Warblers, Finches, Yellowhammer, Blackbird and Songthrush; the last species finding an abundant supply of snails, judging by the remains surrounding their anvils. Meadow Brown butterflies were still flying; we disturbed specimens of the Common Blue and found Six-spot Burnet moths in the grasses, from which large numbers of micro-moths flew up as we walked along. Alarm calls from Swallows alerted us to a passing Sparrowhawk.

We recorded approximately 160 species of flowering plants and ferns, which included three orchids, Kidney Vetch (*Anthyllis vulneraria*), Hare's Foot Clover (*Trifolium arvense*), Hoary Pepperwort (*Cardaria draba*), Purging Flax (*Linum catharticum*) and Meadow Cranesbill (*Geranium pratense*), about 20 grasses, Hard Rush (*Juncus inflexus*) and Carnation Sedge (*Carex panicea*).

Also present were many garden escapes, bushes of *Philadelphus, Forsythia, Buddleia* and *Rosa rugosa* agg.; herbaceous Michaelmas Daisy (*Aster* sp.), Lupin (*Lupinus* sp.), Evening Primrose (*Oenothera* sp.), Alkanet (*Pentaglottis sempervirens*) and Tansy-leaved Yarrow

(*Achillea distans*), semi-parasitic Eyebright (*Euphrasia* agg.) and Red Bartsia (*Odontites verna*) were discovered amongst the grasses and lots of wild strawberries.

Hawthorn scrub contained Honeysuckle (*Lonicera periclymenum*), Hazel (*Corylus avellana*), Rowan (*Sorbus aucuparia*) and a single Apple Tree (*Malus* sp.). Two forms of Bindweed (*Calystegia sepium*), one with pink flowers and the other, the more common white, scrambled along a wall (see page 29, *Checklist of the Flowering Plants and Ferns of West Lothian*, published by The Botanical Society of Edinburgh, 1989).

At present this small area is a delightful haven for wildlife and is also enjoyed by the local people as a peaceful recreational park. To destroy it would be both regrettable and reprehensible.

Mary Robertson

Roslin Glen – 27 July

During the week prior to the foray, friends in the Glasgow area assured us that there were masses of fungi in the west. Meanwhile, fungi in the Edinburgh area were reluctant to appear and the 12 members who came for the foray had to be content with very few specimens and a lot of hunting to find them. At least, it was a nice day and a walk through the Glen is always attractive.

Access to the car park along the Glen amongst the old gunpowder factory ruins was also denied us, the road having subsided down the steep slope, and parts of the road still left looked very unstable and likely to collapse before long.

A circular route was followed along the river, past the weir, then up onto the disused railway line. After a lunch stop at the site of Rosslyn Castle station the foray continued along the line, then branched off onto a farm road. This led back to the main road and car park.

In all, 20 species were identified of which *Collybia confluens* was the commonest. *Lepiota cristata* was present at several sites along the track side. The most interesting find was *Pluteus salicinus* growing on a decaying deciduous tree trunk in woodland at the side of the railway track.

Elizabeth Farquharson

Dere Street, the Roman road from the Forth to York – 3 August

This is a sequel to the Dere Street excursion last August. Choosing a more spectacular part of the Street, 20 members arrived via Jedburgh at Whitton Edge. Romans often used existing native tracks and as we walked along the grassy path we passed four native forts, three cairns (the dead were buried at the roadside) and two stone circles. The Street became the main north-south route in medieval times. In the 18th and 19th centuries it was used as a drove road from Falkirk Tryst to the English markets. Passing Pennymuir we recalled the great sheep and horse fair held every autumn till 1908. Passed Pennymuir we saw the outlines of the Roman camps before our road crossed the Kale Water at Towford and ascended Woden Law.

Some members preferred to botanise along the banks of the Kale Water, while others climbed Woden Law to see the fort and earthworks and the road skilfully built across the narrow “Neck” and on to Chew Green. Visibility was good so we saw the splendid panorama of the Border Hills from Cheviot to Wauchope Forest.

Connie Stewart

Dobb’s Linn – 10 August

Members approached Dobb’s Linn by the A708, stopping at St. Mary’s Loch to visit the statue of James Hogg, the Ettrick Shepherd. The starting point for this excursion is Birkhill cottage where a plaque on the wall commemorates the geologist Charles Lapworth (1842–1920).

It was Lapworth who, collecting and studying the graptolites from nearby Dobb's Linn between 1872 and 1877, first worked out the great importance of the fossil remains from this location.

On leaving the cottage the party descended from the bus at the layby near Raking Gill (NT 197154), there is space here to leave one or perhaps two cars. Buses should then go on for a mile to the car park at the Grey Mare's Tail (NT 196145). From the alighting point it is an easy walk down the slope on the right bank of Raking Gill to the entrance to this fine geological section. Over many years the stream (formed within the gorge from the confluence of the Maister Grain, High Grain and Long Burns) has cut through folded Ordovician and Silurian shales to expose fine sections. From the scree slopes below these sections it is possible to collect many graptolites. These small fossils appear as white or silver grey films on the surface of the dark shales. In appearance they can look rather like pieces of a hacksaw blade with the teeth greatly magnified. The graptolites from each level of rock exposed contain quite distinct faunas and it was these differences that Lapworth used in working out the stratigraphy at Dobb's Linn. Graptolites are very good zone fossils or indicators of change and by identifying the different types of graptolite the boundary between the rock types could be precisely located.

The going underfoot up this narrow gorge required stout boots or wellingtons with good sole grips. The burn has to be crossed several times and narrow scree paths negotiated in several places. There is little danger provided members of the party do not try to climb above the waterfalls (Dobb's Linn) which are revealed as the party reaches the stream junction half way up the gorge. From near the base of the waterfalls the group climbed out northwards onto the surrounding moorland. We traversed the moorland for a few hundred yards to the east, passing on the way within a few yards of a feral goat and its kid, re-entering the gorge by turning south down the valley of the Long Burn. Many fine graptolites were collected from the screes in the Long Burn.

There are interesting plants in the area, including very fine stands of Parsley Fern (*Cryptogramma crispa*), but the feral goats which members saw, perhaps explains why the flora is not as profuse as it might be. Graptolites can be easily collected from the scree and the use of a sturdy pocket knife and small hammer is helpful in splitting larger pieces. By pooling their finds after the excursion, members of the party were able to discern the different types of graptolite occurring in the rocks of the Ordovician and overlying Silurian Period. It was also evident by this time just why it had taken Lapworth so many years to collect and identify the many kinds of graptolite which can be found at the site. I would like to stress that the area is very important as a site of scientific interest and although graptolites are common, visitors are asked not to dig or excavate for fossils, nor indeed to remove vast numbers from the site.

Bill Baird

Aberlady – 17 August

Aberlady in August is as rewarding as any month. The waders are returning from their northern breeding areas, many in summer plumage still. As we looked back to where the Peffer Burn joins the bay, two very fine Grey Plovers were on view, their entire face, chest and belly strikingly black. Two Greenshank flew above them calling wildly. Where a field had been cut beside the Marl Loch several Partridge could be more easily seen than usual. Also at the Marl Loch everyone had stopped for a close-up of ... a guinea pig, who paid little heed to the 16 bodies all wondering why and how a guinea pig had come to our local nature reserve.

At the new scrape, a Snipe was well camouflaged, its head under its wing. In among the dunes the Grass of Parnassus (*Parnassia palustris*) was flowering profusely and Autumn Gentian (*Gentianella amarella*) was in bud – perhaps next week a further visit would show them at their best!

Lunch was taken at Gullane Point where moulting Eider were riding the waves. Common Scoter and Cormorant were there too. On the rocks were Turnstone and on the beach Bar-tailed

Godwit. Sandwich Terns were collecting fish with ease, calling loudly even with a fish in their bills.

A little nearer Gullane, two Golden Plover were on the rocks, unlike the Grey Plover they had lost their black summer plumage but their backs were glinting like gold in the sunshine while over in Fife the thunder rolled! Shortly afterwards we turned our backs on Gullane and returned to Aberlady on different paths admiring the colour of many little flowers on the way. Our thanks to Bill Clunie for a very enjoyable outing.

Molly Woolgar

Craigie Wood, West Lothian – 21 August

On a beautiful August evening an enthusiastic group, looking for fungi, were welcomed to Craigie Wood, near Dalmeny, by the sulphur-coloured fruiting bodies of *Hypholoma fasciculare* at the base of a tree. Further into the wood a specimen of *Boletus erythropus* was found. When it was cut, the chemicals within the cell tissues were exposed to the air and oxidised to produce a spectacular colour change. This fungus appears on charts of both edible and poisonous fungi but on appearance alone we were in agreement that its edibility was highly suspect. Towards the top of the hill there were spectacular views over the Forth. *Leccinum versipelle* appeared in profusion and there was also some *L. scabrum*. This was only to be expected considering the amount of birch growth.

Collybia confluens and *C. peronata* were found frequently and also one specimen of *C. maculata* with its long stipe curving away under a log and the typical rusty-brown stains on its cap. *Russula ochroleuca* and *R. fellea* were compared for both colour and smell. There was quite a variation in the group in ability to detect the geranium smell associated with *R. fellea*. Several other reddish *Russulas* were found which, on the basis of field characteristics were considered to be *R. cyanoxantha, R. atropurpurea* and *R. mairei*. The only ascomycete found and identified in the limited time available for an evening foray was *Xylaria polymorpha*.

We were fortunate that one of the group brought a species of *Thelephora* for us to see. This had been collected in the nearby Dalmeny Woods.

The wood yielded up a good selection of the more easily identifiable species. It was encouraging to hear the increasing use of the Latin fungus names by so many in the group as the evening wore on.

Eunice Smith

Elie to St. Monance – 31 August

The east coast haar lifted eventually and the fine view could be admired. On a normal day the entire walk would be visible from the Lady Tower but none of the ruins passed was seen clearly until we approached them. The Lady Tower was built as a summer house for Lady Janet Anstruther about 1760 where she could sit after bathing in the bay below. She had a small beach pool built so water was retained at low water and a changing cavern. To ensure privacy a bellman walked the streets of Elie and announced the time that she would be bathing so as to warn all to keep away.

The ruins of Ardross Castle and Newark Castle are on this part of the Fife coastal walk which comes out at the gateway to St. Monan's Church. This is a lovely old church built from 1362 for David II, and most of the group had a look inside.

Not far down the Forth is the Isle of May where some terns were heard and later seen and most likely they would have spent the summer either there or on one of the other islands. The Gannets were also diving after their summer on the Bass Rock.

Molly Woolgar

Monteviot Woodland Centre, near Jedburgh – 21 September

The Edinburgh Natural History Society and the Botanical Society of Scotland paid a return visit to the Monteviot Woodlands on Saturday, 21 September, having previously been there to hunt for fungi on Saturday, 5 October 1985. On each occasion the outing was organised by Mr. Stewart Roberts.

It has been a poor season so far for fungi so hopes were not high, but the group of over 25 people divided so that a larger area could be covered. One group hunted along the riverside; the other made their way up to the monument.

In all, just over 50 species were found; none was abundant and many were in poor condition. It is interesting to note that around the same number of species were found in 1985, but only about 12 were identical.

Rain which had been forecast held off until our return to the centre where finds were laid out for everyone to see, and for identifications to be made.

Elizabeth Farquharson

Akermoor Loch – 7 September

Akermoor Loch lies in the hills a few miles south of the village of Ettrickbridge End and was the meeting place for the excursion on 7 September.

It was a gloriously sunny day as we set out, first crossing the Ettrick River by a bridge that incorporates a stone from the old bridge, washed away in 1777. The stone bears the Harden coat of arms and is associated with Sir Walter Scott. A steep path led us up, away from the river and onto a tarmac road which quickly became a track going first south-west and then south round Helmburn Hill. The heather was in full bloom, carpeting the low hills with purple and we could smell the nectar. The ground was hard and dry, as there had been no rain for weeks, which made for good walking.

The track led gradually upwards, passing a conifer plantation on the right and near lunchtime we came over a rise and there, in front of us, was the loch shining in the sunlight. Unfortunately, the two Mute Swans that had been there the previous week had departed, leaving only white, downy feathers as proof of their presence. On the far side were about 50 Pochard, 30 Tufted Duck, a few Mallard and one Little Grebe. We sat down on the shingle to enjoy the peace whilst we ate our picnic. Afterwards we continued round the edge of the loch to the southern side where there was a lovely wet flush, which proved to be botanically rich. It included a proliferation of Grass of Parnassus (*Parnassia palustris*), also Knotted Pearlwort (*Sagina nodosa*), Quaking Grass (*Briza media*), Lesser Stitchwort (*Stellaria graminea*), Marsh Pennywort (*Hydrocotyle vulgaris*) and three sedges, *Carex panicea, C. echinata* and *C. rostrata*. Also, Autumn Gentian (*Gentianella amarella*), Water Forget-me-not (*Myosotis scorpioides*) and Soft Rush (*Juncus effusus*) were among the more common wet-loving species.

We retraced our steps and made for the shoulder of the Dod passing over, for some of the time, a route shown on Thomson's map of Peeblesshire (1821) as a drove road. Once round the Dod, we meandered through the heather and eventually found our way onto the track we had taken on the outward journey. This time we were facing the hills on the other side of the Ettrick and had excellent views of the valley and could make out the 16th century tower of Kirkhope standing tall, gaunt and grey against the green of the hill. It really was hot and we had to stop and rest in the shade of a dyke and refresh ourselves.

On the way back we met a local sheep farmer who told us about some of the people who had lived in the two deserted houses we had passed.

With the sun still high in a cloudless blue sky we retraced our steps to the road, crossed the bridge and regained the village of Ettrickbridge End.

Joan Lyburn

Notes on the Fungus Foray to Balquhatson Estate, Slamannan – 28 September

It was a wet and windy morning on 28 September when we arrived at the meeting place at Avonbridge and met the rest of the crowd, some 12 brave, or maybe slightly daft souls, for the Fungus Foray at Balquhatson House, Slamannan. I myself was none to enthusiastic as George McDougall and I had visited the estate earlier in the year and found practically no fungi. The thought of a wet Saturday tramping through wet woodlands and no fungi is no joy.

On our way then, the four miles to Slamannan, along country roads, home district of my youth, passing different places of interest with ghost-like memories of the past. Balquhatson House, then home of the Peddie-Waddels, a family of solicitors from Edinburgh, former holders of some high offices of state when we ordinary folks of the village looked on with awe. But now this Victorian pomposity is sadly diminished and the estate is in its last throes and occupied by, I should imagine, the last of the line, Dick Peddie, an old man of 86 years, crippled with arthritis. Although we never saw him, he was good enough to give us permission to roam the woodlands.

In through the imposing gates, a bit rusty and tied with old rope, we went to find a good parking place behind the old house, and we got started with the baskets on the woodland area around the house. To my pleasant surprise we found not a lot, but a substantial amount of fungi. It was unmanaged woodland with trees left to rot as they fell, mainly Beech and Sycamore, with other oddments. We spent an hour or so in this area and then gathered together at the old garage to lay them out for identification with the expert assistance of Elizabeth Farquharson, without whom I would have been in a terrible mess, my memory now being hopeless.

An old driveway runs for about a mile away to the east of the house with some old Beeches on the left and on the right side mixed woodland with some conifers and a boggy area stretching to an old railway with Cranberry, Blaeberry, Cowberry and the grass *Molinia*. This is difficult terrain but there are clumps of Birch. I decided this would be our later search area, but of course the hungry people demanded lunch and without noticing the rain had gone off and under some old Beeches we settled down. Then to work again, a large area this, and the crowd got scattered. I didn't find much myself but then there are all those eyes and we arrived at the end of the driveway and main road with quite a varied collection, with Elizabeth keeping me from making too many mistakes.

We got back by the main road and a short cut across the fields to the driveway and so back to the cars, and not a spot of rain. Another layout of our further specimens and surprised most of us, George and me especially, the amount we had found – and a day I had dreaded would be a complete flop had passed off quite pleasantly. My only regret was not being able to thank the old man. We did knock on the door but was told later by the occupant of the gatehouse that he was unable to come downstairs on his own. Sad to see that once elegant estate in a dilapidated state, but the way it is suits us. In a good fungus year it could be good.

Richard Hunter

Postscript

In a postscript to the above account, Dick Hunter, asked that he be relieved from leading any future outings. We shall certainly miss him. Two years ago I was amazed (and delighted) to find him on a course I was giving at Kindrogan. I doubt if he learnt a lot, but I am sure everyone else did, for we effectively had two leaders, and turned partly into a fungus course to boot! So I hope Dick will continue to join us when we head towards his home ground in the west.

Jackie Muscott

Farne Islands, Northumberland – 26 October 1991

A party of 16 members set off from Donaldson's Hospital by coach, leaving Edinburgh to the excited crowds gathering for the World Cup Rugby Semi-final between Scotland and England at Murrayfield. A short stop before Bamburgh provided an opportunity to view a large assembly of waders feeding at low tide on the exposed sands of Budle Bay. Then, after lunch at Bamburgh, on to Seahouses to embark on the sturdy, but somewhat crowded launch that was to take us out to the Farne Islands. These are the eastern end of the outcrop of the Great Whin Sill, a volcanic rock (dolerite) that stretches across the north of England.

There was a strong swell, with a brisk shower of rain, as we made our way to Staple Island, one of the larger islands in the outer group. The cliffs and skerries on the east of the island were crowded with Shags, stretching and preening; and in the sea all around the launch male and female Eider bobbed contentedly on the waves. On Longstone Island, which is the outermost of the group, stands the Longstone Lighthouse from whose small windows Grace Darling spied the wrecked paddle steamer “Forfarshire” on the night of 7 September 1838. With her father, she twice rowed out to where the steamer was aground on the Big Harcar rock, and rescued nine people. The sea was much calmer when we were there, and the only other people we saw (the lighthouse is now automated) were skin-divers who seem as much at home among the islands as the seabirds and the seals.

A large colony of grey seals was drawn up on the linked islands of North Wamses and South Wamses, and there were many pups from one week old upwards. The dark, silky bulk of the parents heaving themselves up from the sea contrasted oddly with the skinny, woolly helplessness of the pups, each of them marked with varied colours by the wardens to distinguish pups born on different weeks. But we were told that the pups rapidly gained weight on their rich diet of milk.

The launch then turned back, pausing at Farne Island itself, the innermost of the group, where St. Cuthbert built himself a cell and an oratory in 676, and where he died in 687. A small Benedictine monastery was erected on the site in 1255 and occupied until 1536. Some of the monastic buildings, which were added to over the years, still stand. There is also another automated lighthouse.

And so back to Seahouses, sailing parallel to the sandy shore until we reached the harbour, and our coach which took us comfortably back to Edinburgh. (Sadly, Scotland lost the match!)

Jim Stewart

THE LIBRARY

There are now nearly 900 books in the Library covering many aspects of natural history from plants and animals to soil and geology. During the past year a number of books have been purchased or given to the Society.

Most of the books, of both general and specialist interest, may be borrowed by members, though a few are available for reference only.

Unfortunately, we are no longer able to store books at Melville Street and all of them are now at the Society's room in Donaldson's School. I hope to bring a selection of books to Wednesday evening meetings so that members may have some idea of the wide range of our collection. Otherwise books may be seen at Study Evenings held at Donaldson's during the year. Any member who would like a book on a particular topic is welcome to contact me for further information.

I hope it will be possible in the future to produce a list of the books available. At the moment the borrowing rate is rather low, but if more members showed an interest in the books perhaps Library evenings could be held, when members could borrow books or have the opportunity to study the reference books.

Frances Dunn, Librarian

SOCIETY EQUIPMENT

In addition to books, the Society has various other items which can be borrowed by members for private use. Needless to say, members will be responsible for the care of equipment in their hands.

Telescope:	A Bushnell Spacemaster of 20-45 X magnification in carrying case, a mounting tripod in separate carrying case and a car window mount for in-car use. *Apply to Miss Molly Woolgar (Tel. 667 2688)*
Microscopes:	The Society has seven high-powered microscopes and three low-power stereo microscopes. *Apply to Mrs. Ena Gillespie (Tel. 332 3214)*
pH meter:	An instrument for measuring the acidity/alkalinity of soil or water. *Apply to Mrs. Ena Gillespie (Tel. 332 3214)*
Mammal traps:	24 small mammal traps. It is desirable that anyone using these should first obtain a trapping licence. *Apply to Mrs. Elizabeth Farquharson (Tel. 447 1994)*
Photographic slides:	A comprehensive slide collection was left to the Society by Miss Janet Raeburn. These are mostly botanical subjects but also include birds, mammals, butterflies and Scottish scenery. These slides are kept with the Library.
Bawsinch key:	The Bawsinch Nature Reserve at Duddingston is managed by the Scottish Wildlife Trust. They allow our Society to hold a key, to allow members entry to the hide overlooking Duddingston Loch. *Apply to Mr. Jim Stewart (Tel. 447 4210)*
Computer:	*Apply to John Winham (Tel. 332 9537)*

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